

The National Locksmith®

*The
Total Door*

page 18

On The Cover...



Learning to look beyond just the locking hardware and at the entire door will lead to greater sales, services and profits.

Publisher Marc Goldberg

Editor Greg Mango

Art Director Jim Darow

Technical Editor Jake Jakubowski

Senior Writers

Sal Dulcamaro CML, Michael Hyde, Dale Libby CMS, Dave McOmie, Sara Probasco

Contributing Writers John Blankenship,

Tony Blass, Joe & Dee Bucha, Carl Cloud, Ron & Chris Curry, Richard Allen Dickey, Steve Gebbia, CML, Giles Kalvelage, Jim Langston, Tom Lynch, Tom Mazzone, Don Shiles, Robert Sieveking

Director of Sales & Marketing

Jeffrey Adair

Advertising Account Manager

Debbie Schertzing

Accounting Manager Sheila Campo

Production Assistants Kimberly van Mourik

Dave Krofel

Jeff Farinosi

Administrative Assistants

Sean Selby

LaVerne Schertzing

Shipping Manager Allan Galvez

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Call (630) 837-2044

Fax: (630) 837-1210

E-Mail: natlock@aol.com

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COMMENTARY



Eating Hot Gravel

Over the years I've touched (i.e., nagged, harped and ranted) on the subject of growing a locksmith business at least a couple dozen times. That's because I believe the money isn't behind the counter, and it isn't in the van.

The profit in locksmithing is out on the street where the customer resides or works. I often thought that if I could motivate you to try ten percent harder to talk to people about your services, I could help you make at least ten percent more money.

That's why I have a new hero. Robert John Reynolds, a locksmith in Louisiana. He posted his marketing strategies on the Locksmith Forum of our web site at TheNationalLocksmith.com. In an upcoming issue, we'll print his entire article. But right now I want to summarize some of Robert's techniques used to make more money.

From his local municipality, Robert periodically requests and receives a list of the new businesses that have applied for licenses. The list doesn't include phone numbers, but that doesn't stop him. He calls information and is able to get phone listings for most of the companies.

Robert figures that a newly formed business probably is not already working with an established locksmith. Therefore, they are easier to talk to than cold calls. He phones and asks if they would mind him dropping by with a business card. Most of them do not mind, and he prioritizes those visits based on how interested in security the manager or owner seemed on the phone.

I think that's an incredible idea. Your average locksmith would rather eat red hot gravel than try and market or sell anything. But if you're committed to the idea of improving and growing your business, there's nothing in the world that can stop you.

In his own words, here's how Robert dedicates some of his time, and proves that concept.

"Cold calling is tough for me. I really get bothered by the 'cold shoulder,' but I used to do twenty or so 'door to doors' every Tuesday. I still put on a suit once a month and start from one end of a major road and keep going business to business until I get hungry. Then I go eat lunch. After eating, I keep working until it gets close to five or so. Tuesday is one of my 'off' days so I try to get home early to spend time with the family."

Now there's a man worthy of admiration. He knows that wearing a suit makes a professional impression. He's not thrilled by the cold shoulder, but he's brave enough to go make calls on his fellow businesses anyway. He does this on a regular monthly basis. He rewards himself by going home early, and enjoying his family.

You know what the results of Robert's efforts are?

He's running a hefty bunch of calls per week. He's working in two metropolitan centers. And he's been hiring locksmiths to work for him.

And here's what I consider the very best part of his success.... You can do it too!

Marc Goldberg



Have questions? Want free technical help?
Free Locksmith Forums!
www.TheNationalLocksmith.com

Marc Goldberg
Publisher

Mango's Message

On February 28, 2001, WTNH News Channel 8 in New Haven, Connecticut, produced an undercover investigation on locksmiths unlocking homes without verifying the identification of the person requesting the service. The following is the actual story board transcription and screen shots of that broadcast:

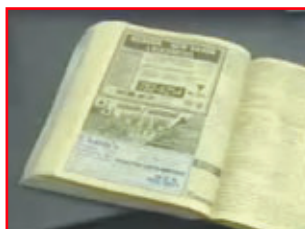
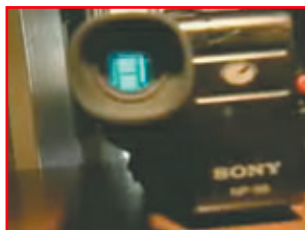
News Anchors: They know how to get in even when you can't. Locksmiths! You call them when you're in a jam and you can't find your keys. But what if it turns out that you're just trying to break into somebody's house? In a special report, News Channel 8's Sara Welch put local companies to the test to see if they would let anyone into any home.

Welch: Locksmiths often come to the rescue when you're locked out. But we found out in an undercover investigation, that locksmith's don't always know who they are letting in.

"Do you have any identification?" It's a question you'd hope all locksmiths ask. But do they? We wanted to find out.

Undercover Producer: "Hi, I'm locked out of my house."

Welch: We used a News Channel 8 producer for our test. Inside each house we placed a video camera with a view of the front door. Our photographer watched from a house across the street. We locked ourselves out and then using the phone book we randomly called four locksmiths in four different communities.



Hidden Camera Investigation "The Locksmith Test"

Champion of New Haven was first. Without asking for any ID this locksmith offered to damage the door and break the lock. We said no.

Next we called the All-Star Locksmiths in Branford.

Undercover Producer: "Yea, I need to get in through this door."

Welch: The same man from New Haven showed up here. Without recognizing our producer, amazingly within a few minutes he broke the lock and opened the door. This time he did ask for a driver's license after the door was open.

Undercover Producer: "I don't have that on me."

New Haven Locksmith: "You don't have a check?" He asked.

Undercover Producer: "No, I have nothing on me."

*Continued on
page 8.*

Greg Mango

**Greg Mango
Editor**



Mango's Message

Continued from page 6

Welch: Without any proof she lives here he let her in.

In Beacon Falls we called the Shelton All-Star Locksmith.

Undercover Producer: "Are these kind of locks hard to get open?" our producer asked.

Welch: Apparently not! The locksmith opened the door. No questions asked. Never once asking for proof of residence.

But in Guilford, the locksmith from Rackliffe followed procedure. Right away he demanded ID.

Undercover Producer: "I only have a credit card."

Welch: Offering a credit card as ID, the locksmith told our producer "That doesn't tell me you live here."

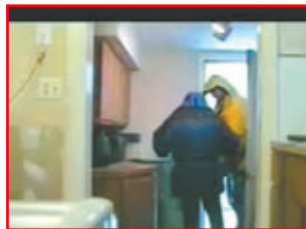
Unsure, the locksmith refused to open the door.

We showed our video to his boss, Russ Rackliffe. Rackliffe said. "We do have certain standards we try to maintain."

Champion also said it has standards, but the company chose not to talk to us about it on camera or review our tape. But in a statement said: "Opening a door without proof is a serious violation of company policy."

Champion is the largest mobile locksmith company in the Northeast, based in Queens, New York. It turns out Champion also runs the Shelton All-Star and the All-Star locksmith in Branford. In each case the Champion employees failed our test, opening the door to the possibility of a crime.

Meanwhile, Rackliffe, which passed our test, says: "It's not always easy getting proof. We do the very best and we do record everything in case there is a problem."



Welch: Rackliffe says homeowners need to feel protected. "There is never going to be a complete perfect way, but you don't want this to happen to anyone."

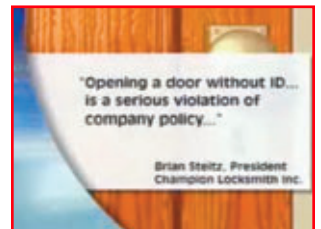
Because of our investigation Champion is conducting its own probes and has issued a notice to all employees: "Effective immediately if a customer doesn't have ID the company won't open a home unless a neighbor or the police are present."

In Connecticut, by the way, there are no state standards for locksmiths.

The intent of this editorial is not to expose or embarrass those featured on the News Channel 8 broadcast, or to point a finger and say how terrible they are. (Except for the one who broke the lever handle to get in. What's up with that?) I'd like to believe that the lock had a high-security cylinder in it. If not, someone needs to give that man a subscription to *The National Locksmith* for Christmas.

The fact of the matter is, the individuals featured did nothing wrong. They provided a legal service with good intent. Don't get me wrong, I do believe they should have insisted on proof of residence, if for no other reason than to eliminate potential embarrassment such as this. However, there is no law in this state requiring proof of residence or ownership before services can be rendered, and there was no evidence of malice or criminal intention on anyone's part. However, that is not how it is conveyed in such undercover news operations when presented to the public.

The purpose of this editorial is to simply tell you to beware. These undercover locksmith investigations will continue. Don't be the next victim caught in the spotlight being portrayed as an unscrupulous locksmith. **TNL**



A P R I L 2 0 0 1

Letters

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length.

Illinois License Law

This is in response to the letter by Pat Wall of Illinois in the February 2001, issue.

Pat asks if anybody can name one good thing about the Illinois License Law. My answer is, I can. Before the license law was passed, there were three part-timer's advertising in the Yellow Pages. These were part-timer's that mainly opened cars. One of them had a little knowledge about locksmithing and I do mean a little. All of them were under charging for their work because they were only part-timer's trying to earn a little extra spending money. They would open cars for \$25.00, anytime of the day or night. Holidays and weekends included. That is if they were not working at their regular jobs.

I complained to the Licensing Department. They are no longer advertising as locksmiths. I believe that is a good thing. One of them did go to work for a tow company and still opens cars. I don't care about that, because I don't really want the car opening business and it is legal for tow companies to open cars. All I

wanted was for them to quit advertising as locksmiths.

Pat, I don't understand why you had such a hard time getting licensed. The State gave all of us an opportunity to grandfather our license. Without looking up the regulations, I believe if you had five years experience as a full time Locksmith, you qualified. Which brings up the question, were you full or part-time?

Yes, hardware stores such as Ace and others are allowed to rekey locks in house. In my opinion it would be hard to exclude them from doing that. But they are not allowed to go to a customer's home or place of business and do lock work, or advertise as locksmiths, unless they have a licensed locksmith working for them. I believe that's another good thing.

You mention that the police even open cars. They are not supposed to except in an emergency, such as when a child or animal is locked in the car. Here is what I did; I wrote a letter to the city police department and the sheriff's department, explaining the new law. I also sent them a copy of the new law. I explained that I didn't feel it was fair for them to open cars since I had to be licensed and they were depriving me of a livelihood. Like I said above, I really don't want to open cars, but it's not right for them to be doing it when I have to be licensed. Both departments quit opening cars. If that had not worked I would have gone to the States Attorney and the City Attorney.

You also mentioned that the Roadside Service Providers primarily use non-licensed tow drivers to open cars. The tow companies open cars for a lot less money than most locksmiths and of course that's why



they use them, but that's just business. I don't believe the law was intended to stop that. Maybe someday the public will wise up to this and call a locksmith on their own. Most of the car openings I do are for people that know me through other work that I have done for them.

I believe locksmiths that depend on car openings are in for a hard time and should look at other aspects of locksmithing for their income.

Pat, our position is fiduciary and I believe the public deserves all the protection the law provides. I also believe it sets us apart from the part time handyman as the professionals that we are.

Ed Hamm
E-mail

Times Used to be Tougher

A response to Francisco Fuentes letter "Ours is a Sad Industry... We need Help!" from the March 2001 issue.

I agree with your assessment of the situation up to a point. I started in this industry in 1969 with nothing more under my belt than a couple of hours looking over a guy's shoulder who wasn't a locksmith, and about seven lessons from the Locksmithing

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The National Locksmith
1533 Burgundy Parkway
Streamwood, IL 60107
Attn: Editor

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Institute. In those days the idea of having classes at local associations was really new and after a couple of years of learning on my own, (the hard way, screw up the first one, then do the rest right), was actually called on by the association to teach some classes. The problem then was that it was a secret profession and that meant that you might not even share a technique with someone you worked with every day.

Those of us who were new then had the same attitude you do now, but like most in this industry, we got a little graphite in our blood and decided to stay and make it better. By the way, the point where I believe your thinking gets a little fuzzy is in comparing locksmithing with computers. There are maybe 200,000,000 computers around today versus around 3,000 - 4,000 locksmiths on-line. You use a computer to get on-line to ask all that stuff about computers, so it is only natural that you should meet up with a bunch of others with the same interests and the knowledge to answer your questions. You need to put it in perspective.

We still use a pin tumbler lock to secure most places, a technology that is now a little over 149 years old. How old is your oldest computer? Maybe 10-years at best. You can find all the information you want on any lock less than ten years old with ease, just like with the computers. I doubt that there is any info available on the web or otherwise on my first computer from 1983, a Leading Edge XT. With that perspective, maybe you will rethink some things. Computers are fairly obsolete after about 3-years. I know of some grade 1 hardware that is still working well after nearly 100 years. Most hardware usage is regional and there have been hundreds of brands and hundreds of models within some brands. No one can know it all, but some of us keep trying. That's part of why we are who we are and do what we do, we like a challenge.

Billy B. Edwards Jr.
E-Mail

Memorable Moments Relived

What a great story in Greg Mango's column (February 2001) about the taxi driver and old woman.

It reminded me, and made me feel good about the fact that I am not only in this type of business to make money, but to render a service.

I had a similar experience one day when I opened a car that had a "Pearl Harbor Survivor" bumper sticker on the back bumper. It was a slow day so the old gentleman and I sat for an hour or so telling me his stories, and sharing his experience of that day. Thanks Greg.

Kris
E-Mail

Pictures from the Past

I would hope we have all had the experience of the cab driver described in Mango's Message (February 2001) at some time in our lives. I do not know if the story is true, but it doesn't matter. If you have fully lived, then at some point you must have had such an experience.

Mine was just after I returned from the Military. I took a holiday season job as camera desk sales clerk for a department store, while I waited for the start of the next semester. While I was going through old packets of pictures to be returned, I saw a name similar to one that had just recently turned in a roll to get developed. The old packet had been in the box almost a year. The previous clerk was supposed to purge any that were more than 90-days old. When the lady returned, I had the old packet out along with the one she was expecting to pick up.

She was stunned when I handed her the older packet and she slid out the pictures. I saw almost every conceivable emotion pass across her face in only a matter of seconds... joy, sorrow, happiness, sadness, all of it.

When she was able to speak, she thanked me profusely. This was a roll of film her husband had dropped off, right after their 30th anniversary party. From the date, it was left the day before he died of a sudden heart attack. The pictures meant a great deal to her and later, one of her children stopped by to specifically thank me for what I had done.

Simple things can mean a great deal to someone else. Never pass a chance to be kind.

Norman Monarchj
E-Mail

Soothing the Pain

In response to Norman

Monarchj's letter, I know the feeling that woman who received the pictures of her late husband must have felt. My father died when I was 13. He was a professional locksmith, aviator, and photographer. There's an old box that has literally hundreds of rolls of undeveloped film at my mom's house. Every time I miss him, I take a roll to the 1-hour photo place. Sometimes it's family shots, sometimes a sporting event that he covered, sometimes it's just a landscape of one of the 37 states that we traveled to together. A picture is worth a thousand tears.

Derek
E-Mail

Thanks for the Prize

Hi Jake, just a note to say thanks for the Year End Prize I won and also for the monthly prize I won earlier. I enjoy reading the tips and have used a lot of them on the job. You have a great magazine and I enjoy reading it. Thanks again.

Jess Tom
E-mail

How Do I dress?

The question often comes up as to how locksmiths should dress on the job. 90-percent or more of my customers are large retailers or commercial/industrial accounts. Having said that, I generally arrive on site with my tool kit and dressed in a white shirt and tie and a sport jacket. There is a good reason for this, which I will explain shortly. I then proceed to loosen my tie, put on a smock, and then do the task assigned by the client. I then proceed to clean my hands, remove the smock, redo the tie and put on my jacket.

This is why I dress as I've described. I then write up the invoice, get their signature, and submit my charges (which are higher than anyone else, except for one locksmith I know of in New Jersey). Only once in 20-years has any client made mention of my charges, and that was for a car opening, which I don't do any more. It seems that clients will pay more – and call you back for more work – when they perceive you as a business person, as opposed to just a locksmith. Try it... you may like it!

Wynn Kessler
So. California



Security Café

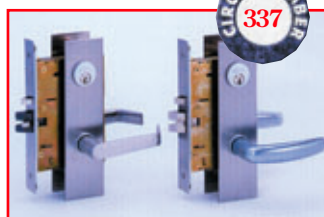
**DROP IN FOR
TOOLS, TECHNOLOGY
& EQUIPMENT**

New Remote Control Key Duplicator

UltraTek has developed new products for duplicating the remote control keys for the new electronics locksmith industry. Exactly like duplicating normal keys, this electronics device first reads the remote control key codes, verifies it, then copies it into the new "blank" remote control keys. Built-in frequency counter display the original transmitting frequency and allows the new remote keys to adjust to the same frequency. Single or Dual frequency (usually at 300Mhz) models are both available. The dual frequency models are designed for controlling two devices on the same key, which is ideal for using one frequency for unlocking the door of the car and the other frequency to open the garage door.



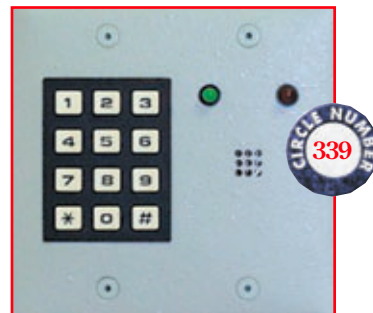
The latch is assembled with steel friction proof fingers enabling reduced pressure to close the door. The deadbolt is constructed with two hardened steel pins to resist sawing. By utilizing stainless steel for the deadbolt, the lock will now qualify for use in most prison systems where mortise locks are required. In addition to these lock components, Marks has also standardized the use of stainless steel on most of its commercial knob and lever designs.



includes the RW Series. This series allows you to change most brands of existing knob mortise locks to levers for ADA compliance without changing the lock body. It provides the same level of Falcon quality you've come to expect.

Kouba & Associates Local Door Alarm

The LDA monitors door contacts, motion sensors, and access control devices, such as card reader systems or keypads to determine and announce the status of a controlled door. The programmable keypad allows for users to be added/deleted, codes to be changed, and for codes 3-6 characters in length to be used.



Translucent Transponder Blank

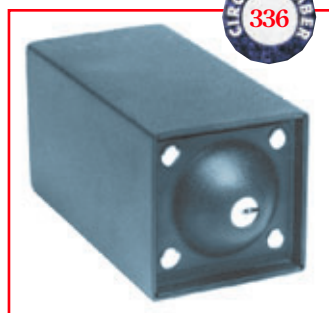


Jet's anti-theft H72-PHT-T translucent bow keyblank for Ford makes it possible to see the transponder chip inside of the key, making it easier for locksmiths to explain transponders to the consumer, showing them what technology it takes to start their vehicles. The new transponder keys are available only to locksmiths and are not being sold to auto dealers.

Cash Cache from Monarch

The Monarch Cash Cache is a compact inexpensive locking vault for use in dormitories, hotel/motels, lockers and other locations requiring a way to secure wallets, money, watches, jewelry, passports, etc. Properly anchored to a floor or wall, this heavy gauge welded steel powder coated case receives a box locked

into place on all four sides, presenting a formidable but affordable solution to personal security. The unit is available with a choice of five different locks according to the level of security desired, tubular, Nova, TriGard, Duo and Medeco. Outer dimensions are 4-3/8" x 4-3/8" x 8-1/2" long. The inner tray is 3-1/4" high x 3-1/2" wide x 6-3/4" long.



Grade 1 Mortise Locks from Marks USA

Marks USA has now standardized their lock using investment cast stainless for both the latch and deadbolt.

Falcon Interchangeable Cores



Falcon's interchangeable core makes it the perfect choice for retrofitting. In particular, if you need to meet A D A e a s y - a c c e s s requirements in an old building, Falcon's RU Series through-bolted leverset is the simple, cost-effective solution. The key-in-lever lock requires minimal door rework and has a 4-inch square rose that covers existing mounting holes, preserving the original architectural feel without adapter plate or add-ons. Falcon also offers three popular lever designs to fit your needs. With the RU Series, key system integration is no problem. These locks accept practically any brand of standard cylinder and interchangeable (removable) core. In nearly every case, you can remove the current cylinder or core and use it in the Falcon RU Series. The RU Series adds to Falcon's extensive retrofit offering, which

DORMA Releases New TS 68 Door Closer



The new TS 68 door closer from DORMA Architectural Hardware provides reliable and versatile control of interior doors at a fraction of the cost of comparable Grade 1 closers. The new closer is adjustable to sizes 2, 3, and 4 by selecting different templating locations, making it appropriate for common interior doors up to 43 inches wide. A special template for regular mounting can enable the closer to meet barrier-free requirements. Quick and easy to install, the TS 68 does not require a mounting backplate. The non-handed closer has

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S E C U R I T Y C A F É

sweep and latch adjusting valves with thermostatic properties to provide consistent closing speeds under a wide variety of temperatures. It also features an optional hold open function from 60 - 135 for a regular mount and 70 - 125 for a parallel arm mount. The TS 68 closer can be finished in aluminum, dark duranodic bronze and gold to complement a wide array of interior design needs. In addition, it is UL listed and CUL listed under their re-inspection programs. Designed to conform to the requirements of ANSI A156.4 Grade 3, the TS 68 upholds the standards for UL 10C and UBC 7.2 (1997) for positive pressure.

Knaack Jumbo Van Shelving

Weather Guard Truck and Van equipment introduces Jumbo Van Shelving for walk-in style vans and trailers to their full line of professional use van equipment. Now available in either 43-3/4" tall or extra tall 59-1/2" heights, these new, taller shelves are extra deep, too. Ranging from 14" to a full 24", they are designed to fit walk-in vans, cube vans and step vans. Design your own package or choose from pre-designed packages for General Service, Parcel Delivery, HVAC, Electrical Service, Plumbing Contractors or Locksmith. The durable 18-gauge steel with 3" retainer lips add rigidity for extra strength. In addition, each shelf unit is sealed with a high grade hybrid polyester powder coating that



is backed on at 450 F. Flexible and durable, the finish resists cracking and chipping as it smoothes rough edges. The WG-TI Brite White finish brightens up the interior for good visibility. Interlocking end panels provide quick assembly without hardware. For additional quality assurance, all Weather Guard products are backed by a two-year warranty covering defects in material and workmanship.

Lockmasters ITL-2000II

Following in the footsteps of the well-known ITL-2000, the ITL-2000II Automatic Dialer offers safe technicians and locksmiths unparalleled quality and ease of operation in automatic safe opening. The ITL-2000II includes a new, easier to use single piece magnetic base for fast, efficient and slip-free mounting. The new



updated software now includes the ability to perform either left-right-left or right-left-right dialing.

New Stand Alone Proximity Reader

The new SDC 950 EntryCheck is a self-contained, stand-alone proximity reader and PIN pad. With simplicity in mind, the reader has been designed with the most basic features and operation. Prox Cards, Key Fobs and PIN entries codes can be added and deleted with the master programming card or master PIN code. Choice of entry mode includes prox card only, PIN only, prox card or Pin. Features include 500 user capability, 6 inch read range, REX input, tamper alarm and two relay outputs. The new 950 EntryCheck is ideal for entry-level applications at an economical price.



Decorator Door Plates

Carlson's Lock Service has 4" x 9" polished brass decorator door plates which can turn a simple repair job into an upgrade for the customer. Plates fit 1-3/4"

and 1-3/8" doors with a 2-3/8" backset. The plates have a flat edge for easy installation and have a lacquer finish for a lasting shine.



Ultra-Dog from Access Denied

Ultra-Dog keeps burglars out. At this California retail store, burglars quickly overcame the panic hardware. The door held, because Ultra-Dog's cam



action drew the door tight against the jamb while adding up to 10,000 pounds of physical deterrence to the existing door and hardware. Layered security gave the police the time they needed to deploy. Already tested and used by the DoD and NRC, Ultra-Dog is now used by more and more retailers. Give your business and schools the same after-hours advantage. Install Ultra-Dog high security devices and end the liability issues associated with padlocks, elephant chains or otherwise blocked doors. It stops the problems with jimmy bars, taped locks and doors left ajar.

TNL

High Security Safes Volumes 1 & 2

Learn to open High Security Safes now!

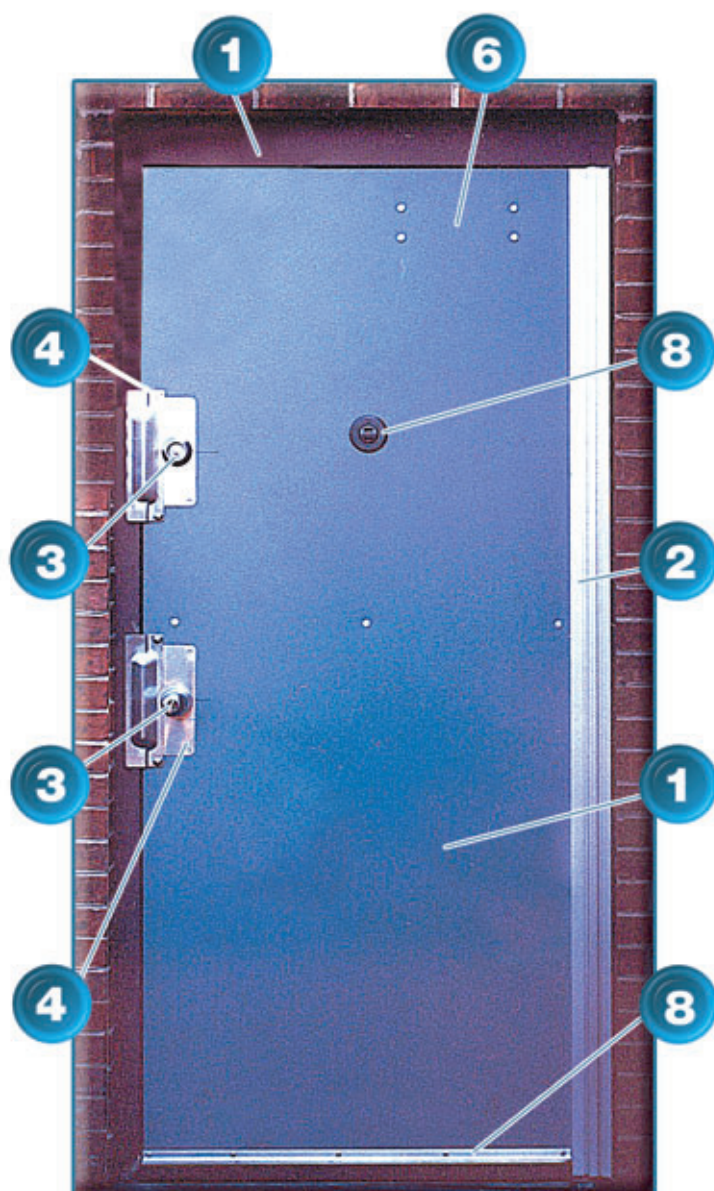
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BY JAKE JAKUBOWSKI

TOTAL

DOOR SERVICE



1. THE TOTAL DOOR SHOWING VARIOUS COMPONENTS
FOUND IN THE 10-STEP TOTAL DOOR SERVICE
EVALUATION CHART.

A couple of years ago, I represented *The National Locksmith* at the Door and Hardware Institute show in Charlotte, NC. I talked to a lot of the attendees, manufacturers and some of the folks from DHI. Several things impressed me.

First off, many of the manufacturers that we, as locksmiths, are used to seeing at the ALOA and various local association-sponsored shows were there. Plus, many manufacturers that we know about, but never see at 'our' shows and many door hardware manufacturers that we probably know very little about, were all represented at the DHI show.

There were not only lock manufacturers, there was also a full range of door hardware makers, sales reps and displays, door closers, operators, astragals, mullions, exit devices, hinges, pivots, hangers, pulls, push plates, door-stops, holders, mop plates, kick plates, weather-stripping, door mutes, magnetic locks and more. There were toilet stall manufacturers and automatic door makers. Decorative hardware builders and specialty security hinge crafters and door manufacturers. If it had anything to do with a door, new door hardware, or replacement door hardware, it was represented at the DHI show.

One thing that impressed me above all else was the fact that DHI actively advocates what I've been promoting all along: The concept of "Total Door Service." (See my article "Just Replace the Door" in the April, 2000 issue of *The National Locksmith*. That article details the installation of a neat replacement door concept that I found at the Charlotte show.) From new installs to replacement doors, DHI had a good representation of manufacturers and their products. Products that are available to any locksmith or door hardware technician who is willing to perform installs, repairs or replacements, to virtually any component of a door or set of doors.

I walked out of the DHI show with a number of money-making ideas, including the one in the above-mentioned article. The fact that I had the opportunity to work the floor of the show and meet various vendors; plus the fact that I was able to leave the show with information that would enable me to increase my shekel intake, made a very positive impression on me. This in turn, led me to look more closely at what DHI had to offer.

What did I find out? Well, a number of things.

First, you don't have to be a member of DHI to take advantage of their educational and technical offerings. If you're a member, you receive a substantial discount on books, classes and materials from what a non-member pays. That means you can take advantage of a wealth of information regarding all phases of DHI's expertise, if you're willing to pay for it. Of course, being a member of DHI has positive benefits that non-members cannot enjoy.

More about that later. Let me go back to the total door service concept for a bit.

One of the things I picked up at the DHI show was DHI's "Sequence & Format for the Hardware Schedule." This document details how to uniformly list various hardware needs under each door heading. By standardizing the

scheduling format, DHI shows how to reduce errors and achieve greater accuracy when checking item quantities and openings against specifications. Sort of like doing a door diagram for a master key system.

SCHEDULING SEQUENCE

1. HANGING DEVICES:

- Hinges (including Electric, Spring, Continuous)
- Pivots or Floor Closers (including Electric)
- Track and Hangers

2. SECURING DEVICES:

Inactive Leaf (For Pairs of Doors Only)

- Manual, Automatic, Self-Latching Flush Bolts or Surface Bolts (indicate if a Dust Proof Strike is required)
- Removable Mullions
- Exit Device (including Electric and Accessories)
- Dummy Trim
- Two-Point Lock
- Cremone Bolt
- Door Position Switch
- Electric Strike
- Magnetic Lock

Active Leaf (or Single Door):

- Lockset or Latchset
- Dead Lock
- Exit Device
- Two- or Three-Point Lock
- Cylinder for Locking Device (if not the same manufacturer)
- Electric Strike
- Door Position Switch
- Magnetic Lock
- Electronic Locking Device (and Accessories)
- Dutch Door Bolt

3. OPERATING TRIM:

- Door Pulls
- Push Plates
- Push and Pull Bars

4. ACCESSORIES FOR PAIRS OF DOORS ONLY:

- Coordinator*
- Carry Bar

* Stop-mounted coordinators affect the surface-mounted vertical rod exit device/fire exit hardware, i.e. length of top rod and strike. Also, they affect installation of parallel arm and top jamb door closers. When used, they should be listed ahead of these products.

5. CLOSING AND CONTROL DEVICES:

- Surface or Concealed Door Closers
- Mounting Brackets
- Electronic/Pneumatic Door Closers (and Accessories)
- Power Operated Door Closers (and Accessories)
- Overhead Door-stops and/or Holders

6. PROTECTIVE PLATES AND TRIM:

- Mop Plates
- Kick Plates
- Stretcher Plates
- Armor Plates
- Door Edges

7. STOPS AND HOLDERS:

- Door-stops and/or Holders (Floor or Wall)
- Electro-Magnetic Door Holders

8. ACCESSORIES:

- Thresholds
- Weatherstripping and Gasketing
- Astragals

9. MISCELLANEOUS ITEMS:

- Door Silencers
- Room Numbers
- Room Name Plates
- Door Knockers
- Card Holders
- Letter Box Plates
- Smoke/Fire Detection Devices (not already integrated into any of the above)

10. MISCELLANEOUS ITEMS:

(LISTED AT THE END OF THE HARDWARE SCHEDULE)

- Key Control Cabinets, Key Control/Software
- Electro-Mechanical Hardware and Accessories not listed elsewhere in the schedule (Power Supply, Door Control Unit)
- Drawings
- Manuals*
- P.C.'s*
- Printers*
- Wire*

* May be here or in their own set

Why did I find that particular document so interesting? I immediately recognized that the locksmith who wants to expand their services to the total door service concept, could adapt this ten-step program as an aid in evaluating door problems as opposed to lock problems.

Many times when you're called out to service a lock, the

problem often lies with the door or one of its components, other than the lock itself. For example, when a door will not latch properly, the fault most often is not because the latch is broken, but because the door is sagging, the hinge is worn, the closer is bad, there's too much back pressure (air conditioning stack pressure), added weather-stripping, or a dozen other reasons.

Although there are a few items in the schedule (like kick plates, mop plates knockers and letter box plates) that would not be germane to evaluating the proper operation of the primary door components, the schedule could be utilized for that purpose. In fact, if you look at illustration A, you'll see how I adapted the Sequence & Format for the Hardware Schedule to my own door evaluation sheet.

Like DHI's Sequence & Format for the Hardware Schedule,

my ten-step evaluation sheet offers an organized, systematic approach to developing a total door service guideline you can use to reinforce your customer's perception of you as a professional.

Before you use my evaluation sheet, you must first clarify the customer's complaint. Then check the obvious causes (such as a bad latch, bent strike plate or an obstruction that prevents the door from closing, etc.) that might be responsible for the malfunction.

TEN-STEP TOTAL DOOR SERVICE EVALUATION CHART

1 THE DOOR AND FRAME:

- Make sure the door is not warped, rusting or splitting at the seams and the frame is straight (plumb) and level. Check to make sure it is solidly attached to the wall with no "play" or motion when the door is opened or other stress is applied to the frame.

2 HANGING DEVICES:

- Check all the hinges (Including electric, spring, continuous, etc.) to make sure they don't wobble, sag, bind or "rack" the door because they are bent. Check all the pivots, floor closers, tracks, hangers and guides for proper operation.

3 SECURING DEVICES:

- On a pair of doors, look at the inactive leaf first. Check the operation of the manual or automatic self-latching flush bolts or surface bolts. If the bolts have a dust proof strike, make sure the spring-loaded dust cover is not malfunctioning.

Check the removable mullion (if applicable), the exit device, two-point lock, electric strike or the magnetic lock. In other words, check all the installed hardware for proper operation and alignment.

Next look at the active leaf of the door (or if it is a single door), and check the locksets, latchsets, deadbolt, exit device, the two or three point locking device if applicable, auxiliary locks, electric strikes, or any other hardware that could malfunction and cause the complaint.

4 OPERATING TRIM:

- Although operating trim, as such, has little influence on the operation (hinges, latching, closing, etc.), the operating trim can be a good service revenue source. Check the door pulls, push plates, push and pull bars (crash bars), etc. for tightness, missing screws and sharp edges.

5 ACCESSORIES (FOR PAIRS OF DOORS ONLY):

- Check for the proper operation of the coordinators and carry bars. The coordinators allow the inactive leaf to close first by holding the active leaf in the open position. Carry bars are the hardware that allows the active leaf to open first when the inactive leaf is pushed open. Stop mounted coordinators influence the installation and proper operation of other door hardware such as surface mounted vertical rod exit devices and fire exit hardware. They also affect the installation of parallel arm and top jamb door closers.

6 CLOSING AND CONTROL DEVICES:

- Check the operation of all surface mounted or concealed door closers. Check all mounting brackets for loose screws, alignment and security. Make sure any electronic, pneumatic and power operated door closers, operators (and accessories) function properly - including the opening speed, hold open times and closing speed. Check all overhead door-stops and holders.

7 STOPS AND HOLDERS:

- Floor and wall mounted door-stops, holders, electromagnet holders and flip-down door holders all should be checked for wear and proper alignment. (NOTE: Although these are not generally high-dollar items - with the exception of electromagnet holders - I've made a nice piece of change over the years replacing stops, etc.)

8 ACCESSORIES:

- Check the threshold! Thresholds are a frequently overlooked cause of "sticking" doors, doors that won't latch and closers that won't close the door all the way. The threshold on any door takes a daily beating especially in restaurants, or any area where goods are shipped and received. Weatherstripping and sealing gaskets are another source of door problems. The weather turns cold and the customer applies "stick-on" weather stripping to the door-stop and then the door can't close all the way. Same thing with gaskets. Also, the astragal (on a pair of double doors) needs to be checked to make sure it's not bent and is "tight" enough not to interfere with the operation of the door.

9 MISCELLANEOUS ITEMS:

- Door mutes are those little round rubber "bumpers" that are placed on the door-stop of the frame to help silence the door when it has a tendency to slam. They need to be checked to make sure they are not worn out and permitting the door to close too far, and also to make sure they are not holding the door open. Door edges need to be checked for "snags" and rough edges and any armor plates (like MAG and Don Jo) are not holding the door open.

10 REPAIRS AND ADJUSTMENTS:

- After evaluating the door, point out to the customer the service areas that you found that need attention. Show them why certain hardware needs replacing. Adjust, lubricate or replace hardware as necessary after obtaining the customer's approval.

Continued from page 20

Does this program work for me? You bet! I sell a lot of hinges, and other miscellaneous hardware that I would not sell if all I did was file the strike plate to overcome a no-latch complaint. Businesses must comply with Life Safety Codes and the ADA. Malfunctioning hardware, hard-to-open doors and maladjusted closers not only violate Life Safety and ADA, they present security risks as well. The more you know about how to guide your customer to the proper maintenance, repair or replacement of non-compliant hardware, the more shekels you can put in your pocket.

What I believe greatly helps in the process is a comprehensive way to evaluate the service needs of your customer. I believe my adaptation of DHI's Sequence & Format for the Hardware Schedule will help you do just that.

DHI also has technical bulletins available (Tech Talk) on a variety of subjects such as Aluminum Storefront Doors; Butts and Hinges; Continuous Hinges; Electrified Architectural Hardware; Master Keying; plus dozens of other technical bulletins that are offered for sale to members and non-members alike. All of it good solid information that you can utilize to your benefit and profit if you adopt the total door service concept.


DHI can help you find the right hardware for healthcare facilities, labeled fire doors, and they offer continuing educational courses for the individual that wants to expand their horizons beyond the commonplace. Again, the courses

and technical literature are offered to members and non-members alike.

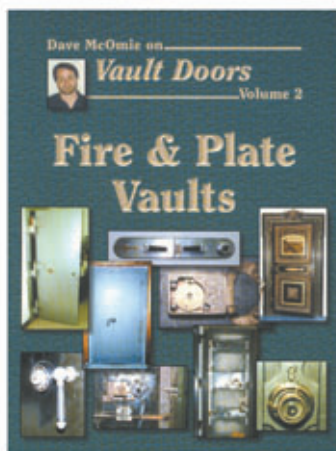
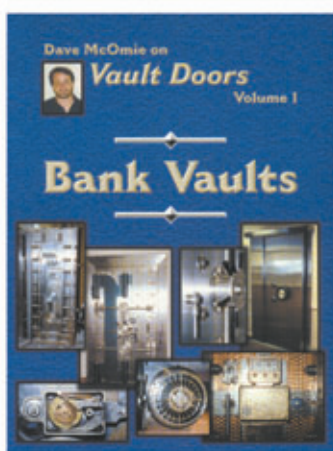
On their web site (www.DHI.org) you can find an incredible amount of information on doors, door hardware and technical stuff just by visiting their links page. There you can visit The First Internet Lock Museum and other unusual sites such as: Industrial Archeology; The Lock Museum of America, Terryville, CT; The Lock Museum at Willenhall, UK; Smith College Museum of Ancient Inventions, and an interesting site called: Locksmithing FAQs and Related Resources.

DHI is an organization that offers useful information to locksmiths whether that locksmith decides to become a member or not. Who knows, you may just be interested in becoming AHC certified. DHI is the place, offering articles, tech bulletins, classes and a web site that is designed with one purpose - to disseminate accurate, useful, and interesting information.

You can learn how DHI can help you expand your horizons by writing to the Door and Hardware Institute, 14150 Newbrook Dr., Suite 200, Chantilly, VA 20151-2223. Phone: (703) 222-2010; Fax: (703) 222-2410; E-mail: info@DHI.org. Circle 301 on Rapid Reply.

Visit their web site, look over their offerings and tell 'em: "Jake, sent me!" 

Dave McOmie on Vault Doors Vol. 1 & 2



These openings can be a nightmare, but not when you bring Dave McOmie along with you on the job.

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Quick Entry

UPDATE

by
Steve
Young



2001 HYUNDAI SANTA FE

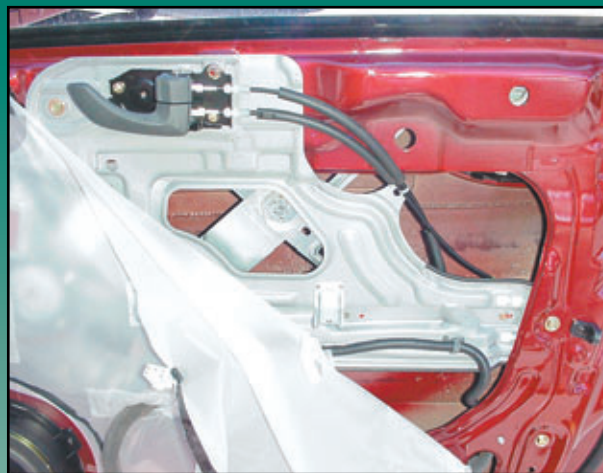
The 2001 Hyundai Santa Fe has been a long time coming. (See photograph 1.) I first saw this sport utility vehicle in January of 1999 at the North American International Auto Show. Since then, Hyundai has refined the design of the vehicle a great deal. The final production version of the Santa Fe is a clean, well thought-out SUV that seems to be appealing to the American car buyer. As our economy slows, value is becoming a more important factor in the minds of many SUV buyers. With that in mind, Hyundai seems to have a winner with the Santa Fe.

The front doors of the Santa Fe, like many of the new vehicles for 2001, uses bicycle-style cables inside the door instead of the traditional linkage rods. (See photograph 2.) This type of construction essentially eliminates the use of "inside the door" tools for unlocking the vehicle. Many vehicles that use bicycle-cables can be unlocked with an "under the window tool" such as the TT-1015, but that is not the case with the Santa Fe. The inside weather-stripping on the Santa Fe fits in such a way that we were unable to get any of the under-window tools that we tried to come up on the inside of the vehicle.

Unlike most vehicles that have started using cables, however, the Santa Fe uses linkage rods on the rear doors. (See photograph 3.) These rods are extremely well shielded and can only be attacked at the point where they connect to the latch itself. This point is almost six inches to the rear of the only access point through the window weather-stripping. It is also located so



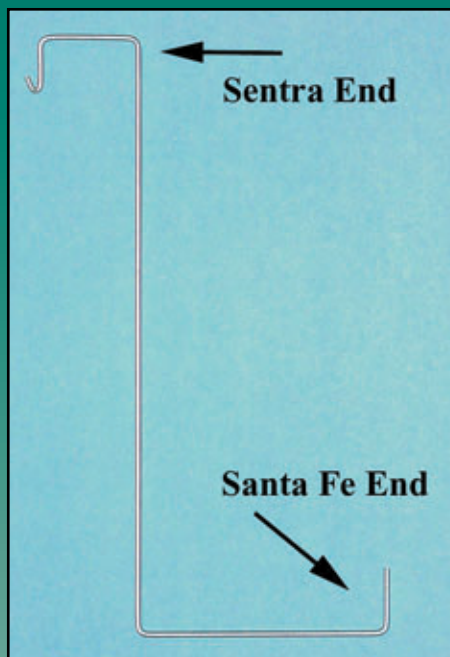
1. 2001 Hyundai Santa Fe.



2. The front door uses bicycle-style cables instead of linkage rods.



3. The linkage rods on the rear door are almost completely shielded.



4. The Tech-Train 1027 tool. The larger end of the tool is used for the Hyundai Santa Fe.

Quick Reference Guide

Vehicle: 2001 Hyundai Santa Fe	Security System: Optional Transponder System
Direction of Turn (passenger side): Counter- Clockwise	Code Series: S0001 - S1000
Tool: TT-1027 or Jiffy- Jak Vehicle Entry System	Key Blank (non-transponder): Ilco: X232; Ilco E/Z: HY12; Jet: HY12, Curtis - HY8
Lock System: Hyundai 8-cut system	

high in the door that it would be impossible to position a tool visually.

One end of the Tech-Train 1027 tool is designed specifically to unlock the Santa Fe. (See photograph 4.) The other end of the tool is used to unlock the redesigned Nissan Sentra through the rear door. The TT-1027 tool has an index mark that is used to properly position the tool for both vehicles.

To unlock the Santa Fe with the TT-1027 tool, begin by wedging open the weather-stripping near the rear of the main window on the back door. (See photograph 5.) Insert the Santa Fe end of the tool into the door and lower it until the index mark on the shaft of the tool is even with the top of the weather-stripping. While holding the

5. Begin by wedging open the window at the back on the rear door.



6. The tip of the tool hooks between the linkage rod and the plastic guard.

7. Pull the tool toward the front of the vehicle will unlock the door.



shaft of the tool vertical, slide the tool as far to the rear as possible. When the shaft of the tool is in contact with the rear window track, the tip of the tool will be positioned far enough back in the door to reach the linkage rod.

At this point, the handle of the tool is twisted so that the tip of the tool moves as far toward the inside of the door as possible. This will place the tip of the tool directly beneath the hori-

zontal linkage rod. Pulling up on the tool until it stops will wedge the tip of the tool between the linkage rod and the plastic guard. (See photograph 6.)

When the tool is properly positioned, pull the tool toward the front of the vehicle while keeping the shaft vertical. The tip of the tool will pull the lock linkage forward and unlock the door. (See photograph 7.) **TNL**

The 2001 Mitsubishi Montero

Part 2



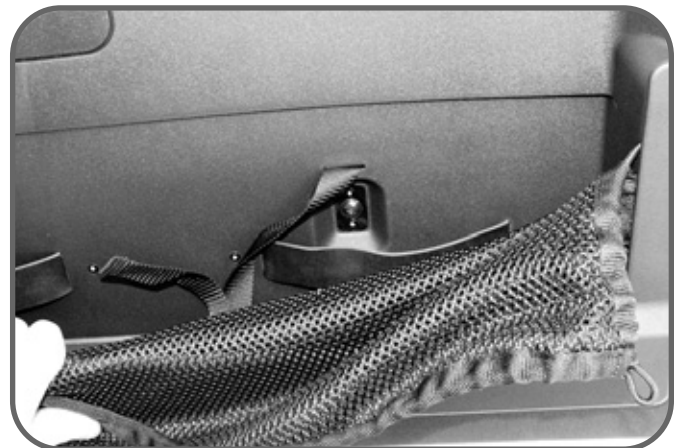
Tailgate Lock Service:



1 The tailgate lock sits to the lower left of the license plate holder.



3 On the right side of the panel is a small tool kit. Remove the fasteners holding the tool kit in place.



4 There is a plastic mesh on the panel. Move the mesh out of the way and will see the 2 screws that must be removed.



by
Michael
Hyde

2 The inside trim panel will need to be removed to get to the lock cylinder.



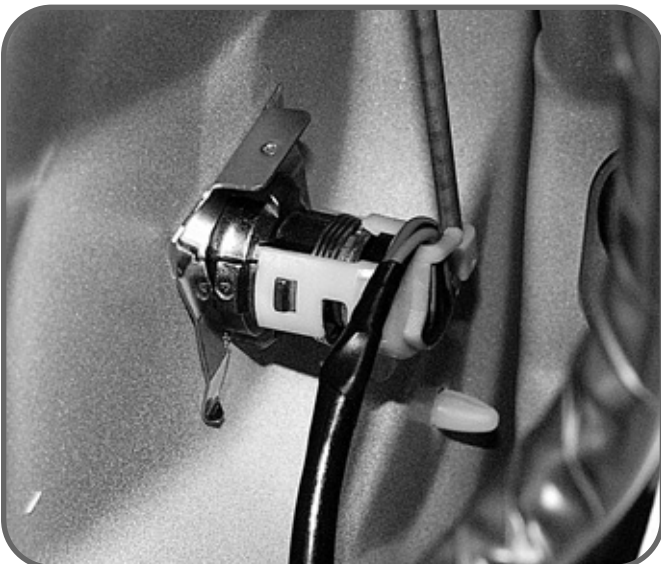
5 The handle pull has 2 screws that must also be removed.



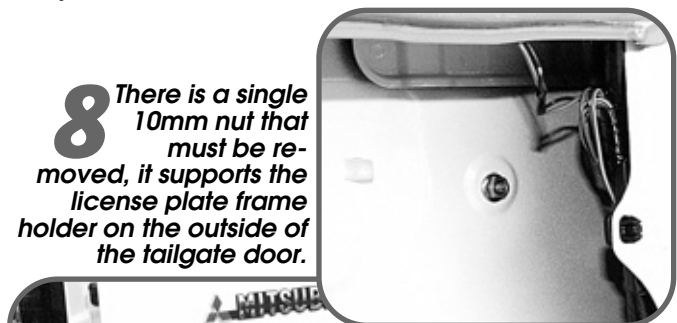
6 Now that the fasteners have been removed we can gently unsnap the upper trim plastic. We don't need to remove the whole piece, just enough to get access to remove the lower black trim panel.



7 Once the panel is removed, gently pry back the plastic weather guard sheet.



9 A horseshoe style metal clip holds the tailgate lock cylinder in place.



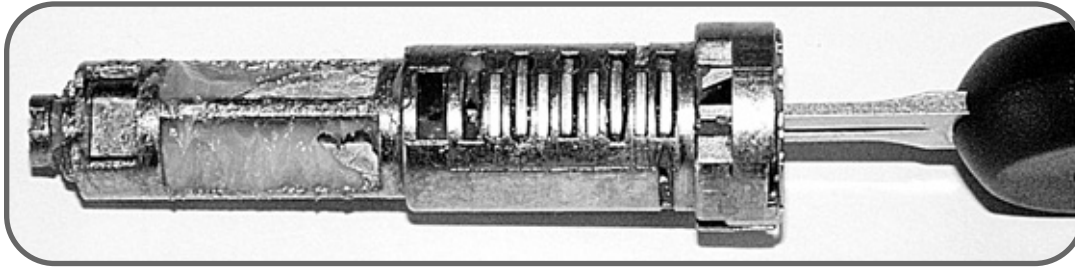
8 There is a single 10mm nut that must be removed, it supports the license plate frame holder on the outside of the tailgate door.



10 The face cap is easily removed and can be reused. The lever (pawl) is held on by a retaining clip.

Continued on page 32

Continued from page 30



11 The lock cylinder plug contains all 8 tumblers needed for a master key.

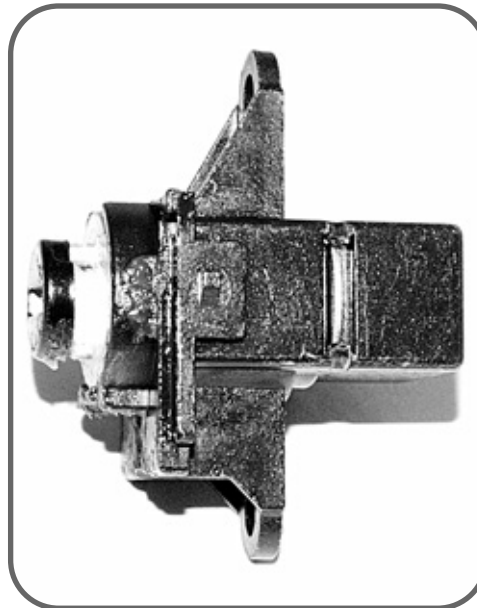
Glove Box Lock Service:



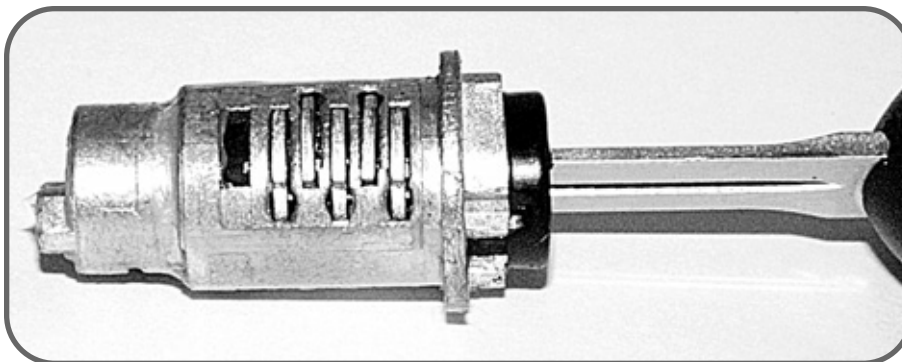
12 The glove box lock assembly is centered in the compartment door and is held in by 2 Phillips screws.



13 Once you have the lock assembly out of the car you can disassemble it. Unsnap the cylinder plug away from the faceplate. Make sure you mark the pieces before you take them apart.



14 The cylinder plug is held by a brass keeper. Wedge out the keeper and slide out the plug. Make sure you mark the pieces before you take them apart.



15 The glove box cylinder plug contains 5 tumblers. Four tumblers are combination tumblers and one is a valet tumbler.

Making First Key:

Method #1: Check owner's manual for codes, written in by the dealer.

Method #2: Use the Japanese1 Determinator™, available from National Auto Lock.

Method #3: Remove passenger door cylinder and read code stamped on lock.

Method #4: Disassemble door cylinder or trunk cylinder, and decode wafers to make master key.

Method #5: Disassemble the glove box and decode the tumblers. The glove box contains 4 tumblers in positions 5 through 8. Use Blackhawk Computer program called "FILL" to progression the remaining cuts.

Transponder System:

Manufacturer: Mitsubishi

Model: Montero 2001

Transponder Brand: Texas Instruments

Transponder Type: Fixed Number

Maximum Number of Keys: 6

Code Series: E5001-7976

Master Keyblank Number: Dealer Only

Aftermarket Master Keyblank: N/A

Locksmith Programmable: Yes. Special equipment required.

Dealer Programmable: YES

Models with Transponder: All

The Transponder System on this car is only serviced with a dealer technical tester device called the 'MUT 2' tester.

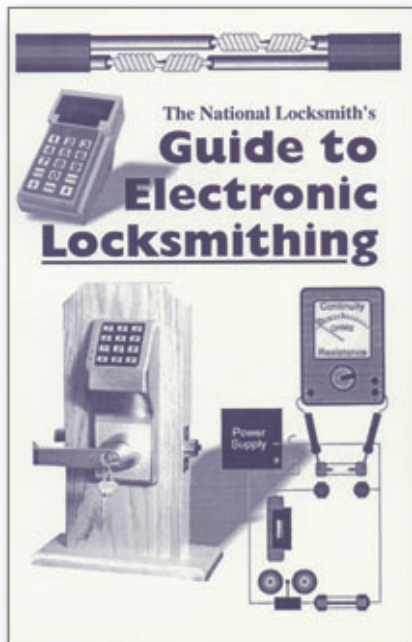
Transponder System, Special Equipment Required, Available from National Auto Lock @ 800-954-5454.

Programming Transponder Keys:



16 A Mitsubishi MUT2 tester is required for programming in new keys. These keys cannot be cloned with the current technology available.

17 The OBD2 access port is located near the front section of the center console. Plug in tester at this port.



Electronic Locksmithing

Everyone knows there's big money in selling, installing and servicing electronic security such as mag locks, electronic strikes, and simple access control.

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18 Once the tester is plugged in, flip the switch on the side to turn it on. The unit will first do a self-test.



19 From the Main Menu, Press the Yes button for "System select"



20 Use the arrow key to highlight "Immobilizer" and press the Yes button.



21 Use the arrow key to highlight "Special func." and press the Yes button.



22 Press the Yes button to continue with key registration.



23 Enter the Pin Code for the model you are programming. Use the up & down arrow keys to select the first number and then use the right arrow to move the cursor to the next digit.



24 Press the Yes button to continue with key registration.



25 Your key is now programmed. Any other keys were now erased and must be entered back into the system using this method.

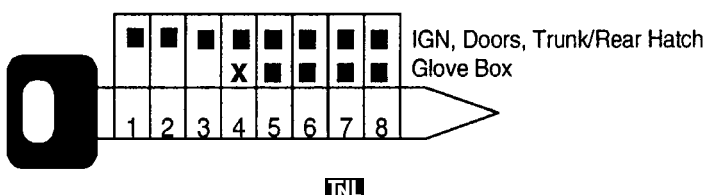


Immobilizer Override:

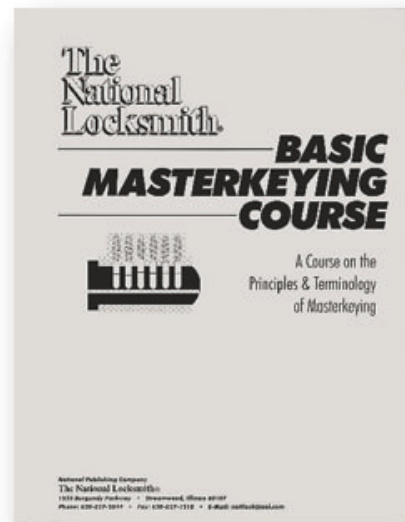
1. Cut the correct mechanical cuts onto a temporary regular keyblank.
2. Obtain the 4-digit brake code.
3. With the temporary key, turn the ignition switch to the ON position. The Security light will flash for 30 seconds and then stop.
4. Enter the first digit of the 4-digit brake code by pressing and releasing the brake pedal that number of times within 30 seconds. Pressing the brake pedal activates the brake light switch which records the code. Example: If the first digit is a 4, press and release the brake pedal 4 times within 5-second intervals. If the digit is a zero, just wait 30 seconds.
5. Check to make sure the Security light blinks 3 times. The blinking light verifies the first digit is stored in the Immobilizer-ECU.
6. Enter the 2nd, 3rd, and 4th digits of the immobilizer brake code by repeating the above steps for each digit. Be sure after each digit is entered that you confirm it is stored by observing the blinking Security light.
7. After completing the entry of the 4th digit into the ECU, the Security light will turn on. If the Security light just blinks then you entered an incorrect code.
8. While the Security light is on, turn the ignition switch to the ACC or OFF position and then back to the On position within seven seconds.
9. The vehicle can now be started 2 times with the non-transponder key. To start it more times, the brake code procedure must be repeated.

Starting the vehicle with a non-transponder key. You will need to get the 4-digit Brake Override Code from the customer or the dealer. If the Brake Override code is not available then you will need to get the Immobilizer-ECU 8-digit serial number.

Key Usage: All		Spacing: Standard		<table border="1" style="display: inline-table;"> <tr><th>Depths</th></tr> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>6</td></tr> <tr><td>7</td></tr> <tr><td>8</td></tr> <tr><td>9</td></tr> </table>		Depths	1	2	3	4	5	6	7	8	9		
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0.098	0.181	0.264	0.346	0.429	0.512	0.594	0.677				0.083						
Code Series: E 5001-7679																	
HPC1200CM: XF88, CX88				ITL Mfr: 196		M.A.C.S.: 2											
Pak-a-Punch: PAK-G04				Clipper Cam: DC-50		Carriage: TOY-50X											
<table border="1" style="width: 100%;"> <tr><th colspan="2">Key Blanks</th></tr> <tr> <td>Mfr</td> <td>Model Number(s)</td> </tr> <tr> <td>Other</td> <td>DEALER ONLY</td> </tr> </table>												Key Blanks		Mfr	Model Number(s)	Other	DEALER ONLY
Key Blanks																	
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Basic Masterkeying Course



13 Lesson
450 page course

The Basic Masterkeying course is designed for the locksmith who wishes to become proficient in Basic Masterkeying.

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#MK - 1

Greenwald Coin Box

by Bill Chrisman

As locksmiths, we are often called upon to do a job in which speed is the prime requirement. This happened to me when called to remove a coin box from a Kenmore commercial washing machine and dryer. The customer had lost his keys and needed to have the box opened, emptied and put back in service as soon as possible. (See *photograph 1.*)

I had never serviced Greenwald locks before, so it was a stroke of luck that a posting in *The National Locksmith* forum recently got me started in the right direction. There are two main methods used to remove this type of coin box. One is destructive and requires replacement of the entire box. The other method is non-destructive and requires about 30-minutes of time. I chose the second

method because coin boxes are not a stocked item by me.

The Greenwald "Guardian" coin box is held together by four case hardened 1/4" x 20 carriage bolts and secured to the rest of the mechanism by a four-point latch operated by a "Triguard" cam lock. It has a hardened cone and takes an extended key. The key code is stamped on the lock body. (See *photograph 2.*)

To remove the box, one must first remove the four carriage bolts. Do this by grinding the head of the bolt to remove the case hardening and create a flat surface. (See *photograph 3.*)

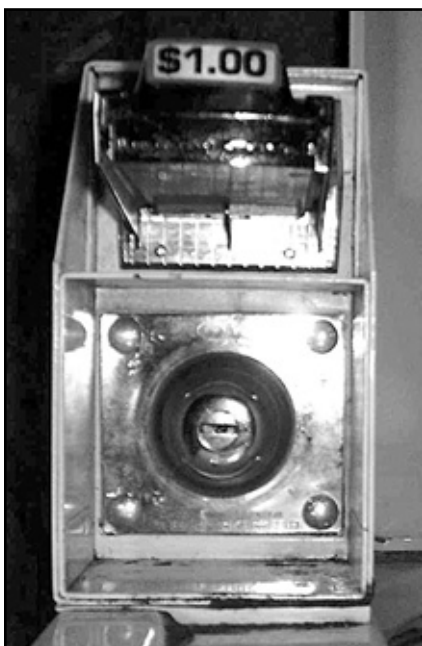
Center punch and drill the surface of the cone with a 3/8" HSS or carbide bit, being careful not to go too far in. (See *photograph 4.*)

Next, punch out the bolts to release the cone shaped cover. (See *photograph 5.*) If the bolts resist, you might need to drill a little more or do a little grinding with your Dermal.

This next step is very important. When the bolts release, everything will tend to fall apart in a heap. Don't let this happen. Mark all the parts in order so that it can all be replaced in the exact order that they were removed.

The first part of the mechanism removed is the front cover. (See *photograph 5.*)

Next will be the cover that holds the cam lock in place. (See *photograph 6.*)



1. The Kenmore commercial washer with Greenwald Coin machine.



2. Disassembled "Triguard" cam lock.



3. Grinding the top off the carriage bolt.



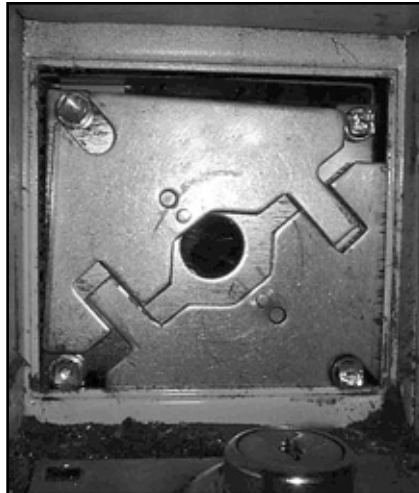
4. Drilling the head off the carriage bolt.



5. The chrome protective cone used on the Guardian coin box.



6. The plate under the cone that holds the cam lock.



7. The 4-point locking plate



8. The front of the coin box.



9. The coin box with coins.



10. A replacement double-sided Fort cam lock was used.

Next is the four-point locking plate. (See photograph 7.)

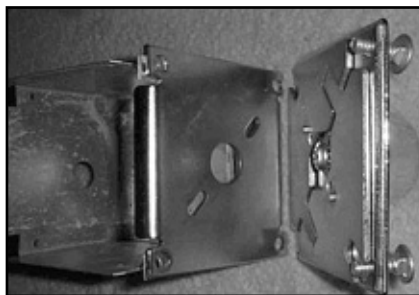
This will take you down to the coin box face. (See photograph 8.)

The coin box can now be removed with coins inside. (See photograph 9.)

Remove the special nuts from the old bolts.

At this point if your are lucky enough to have the proper blank and code reference, make a key.

Not having the proper blank or



11. Coin box ready for reassembly.

lock, I decided to temporarily replace the cam lock with a Fort double-sided lock that I had in stock. (See photograph 10.) Remove the tailpiece from the Triguard and remove the lock from the plate. Install the new lock and then put on the round tailpiece that you took off the Triguard.

Put everything back together in exactly the same order that you removed it and secure with four new 1/4 x 20 x 1/2" stainless steel carriage bolts. (See photograph 11.)

Do not forget the two compression washers or the four spacers. I would also suggest that you use Locktite on all screws.

Insert the coin box into the mechanism and make sure the lock works freely. The job is complete. **TNL**

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VAN LOCK

PART ONE

The company slogan: "Security for the 21st Century", might imply that the locks made by Van Lock Co. are somewhat unusual or futuristic. I can't vouch for the futuristic idea,



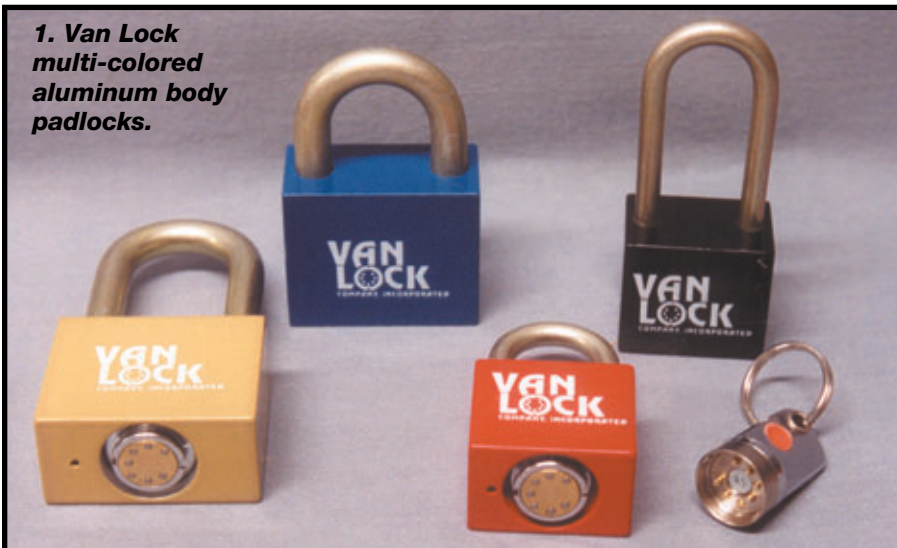
by
Sal Dulcamaro,
CML

but I can say that Van Lock makes some rather interesting and unusual lock and security products. They make a lock cylinder that appears to be the reverse image of the more typical tubular key style lock. While a large part of their earlier customer base was the vending machine industry, the Van Lock product line customer base expands to include casinos, cable TV, hospitals, Government, industrial, and other varied markets.

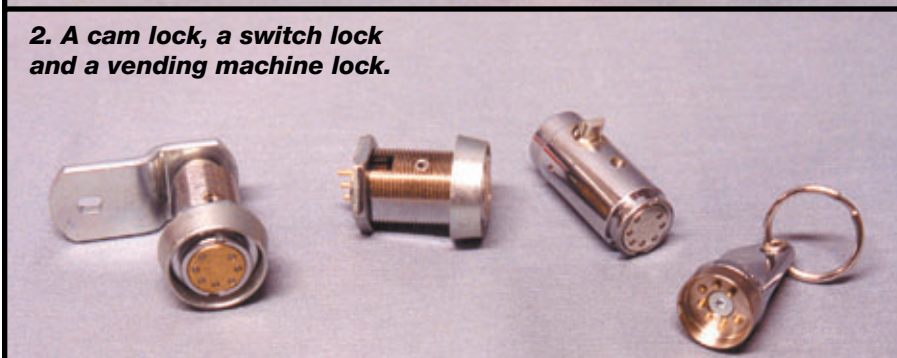
A colorful example of one product line can be seen in *photograph 1*. Multi-colored aluminum body padlocks, for use with safety lock-out systems, are both color-coded and can be color coordinated to keys. The key and the lock cylinder faces show this rather unique variation to the standard 7-pin tubular style key lock. The tumblers are all even with the face of cylinder. The key has what appears to projecting tumblers instead of cuts to interact with and position the lock's tumblers to operate the lock.

In many factories and industrial facilities, OSHA regulations make certain requirements regarding locking out machinery. The Van Lock safety lock-out padlocks have aluminum bodies that will not spark, and the shackles are made of hardened steel. The padlocks are lightweight and the bodies are powder-coated for ready identification and durability. The lock bodies and key handles can be color-coordinated and stamped. The padlocks are automatically key-retaining. The key cannot be removed from the lock until the shackle is re-closed. Padlocks are also available in a version with the Vanamatic feature, which can be used to rekey the lock in seconds without disassembling the lock. Vanamatic will be explained next month in part 2.

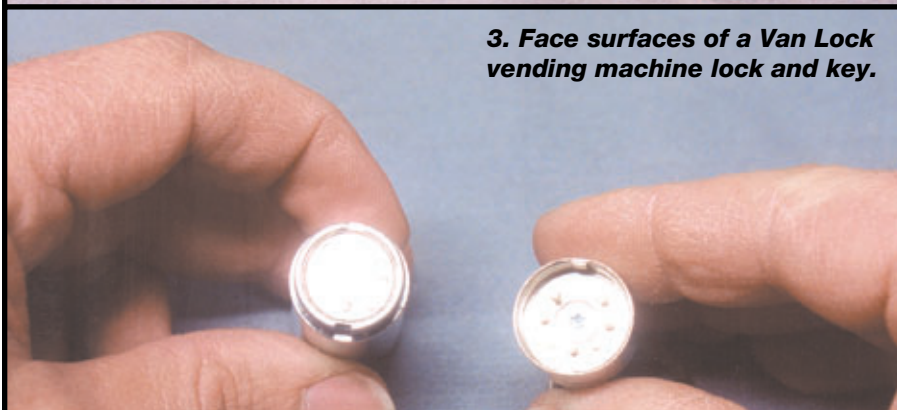
1. Van Lock multi-colored aluminum body padlocks.



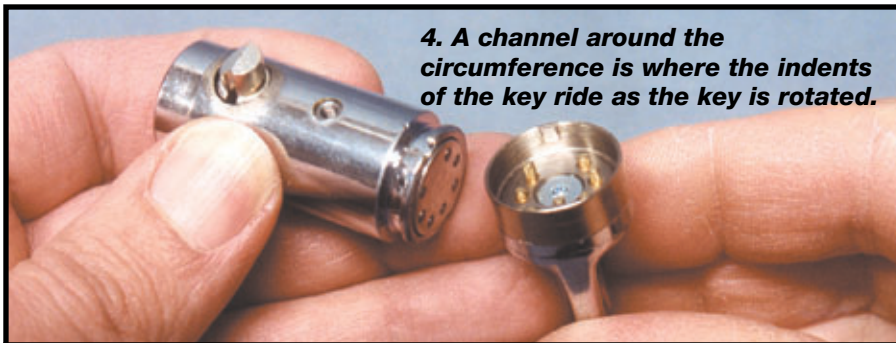
2. A cam lock, a switch lock and a vending machine lock.



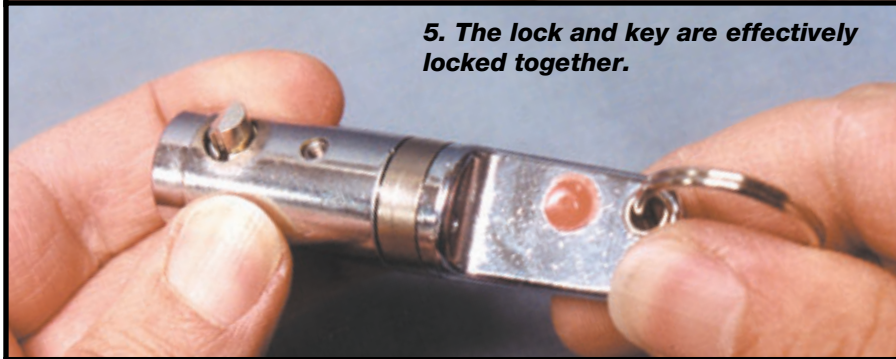
3. Face surfaces of a Van Lock vending machine lock and key.



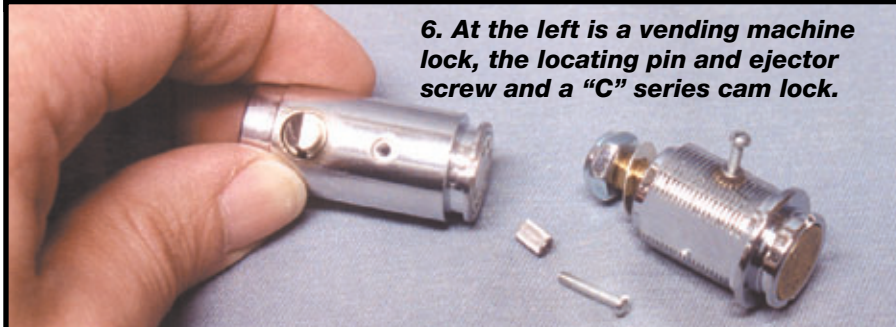
Continued from page 40



4. A channel around the circumference is where the indents of the key ride as the key is rotated.



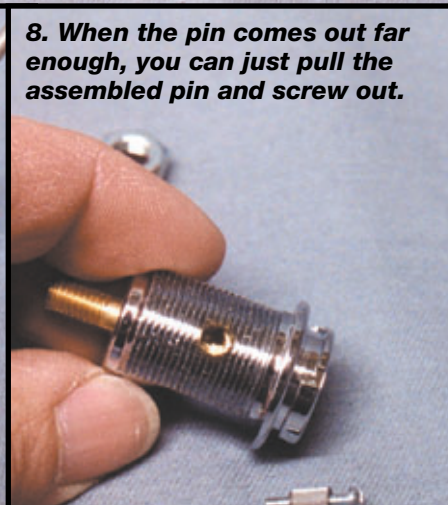
5. The lock and key are effectively locked together.



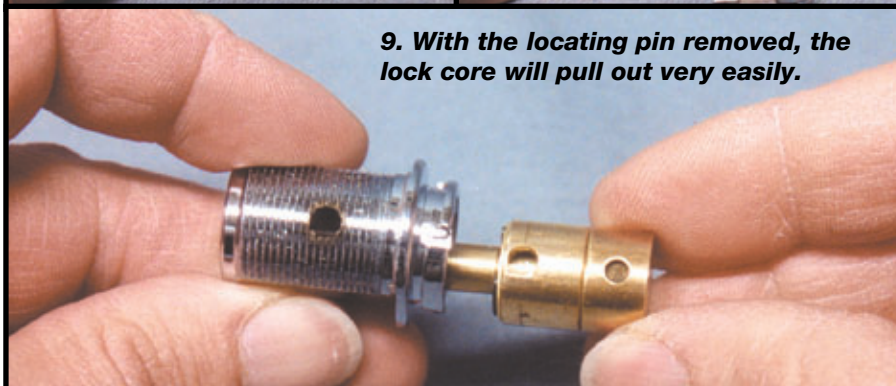
6. At the left is a vending machine lock, the locating pin and ejector screw and a "C" series cam lock.



7. Turn clockwise to force the locating pin out of its hole.



8. When the pin comes out far enough, you can just pull the assembled pin and screw out.



9. With the locating pin removed, the lock core will pull out very easily.

Security Locks for Vending and Cam Locks

The vending machine lock and cam lock together, probably make up the majority of product sales for Van Lock. *Photograph 2*, shows from left to right: a cam lock, a switch lock and a vending machine lock. Just to the right of the three locks is a key. Van Lock makes both a "C" and "H" series of cam locks.

The "C" series cam lock is for use in coin operated equipment and other security applications. The "C" series is available in four lengths. The cam is mounted, by means of a hex nut, to the core spindle. Straight and offset cams are available. "C" series locks come standard with a hardened security ring, large hex nut, "tooth" washer and small hex nut. Also available is an adapter sleeve for use with cams having larger, oblong holes. There are also stock brass adapters for your existing cams with square holes.

The "H" series cam lock is available in two lengths. There are also straight and offset cams in two lengths. In the "H" series, the cam is mounted on the lock housing and is operated by the core mounted "dog". A large hex nut and security ring is included standard.

Like the more common type tubular key lock, there is a means by which the key stays attached to the lock face during key rotation. *Photograph 3*, shows the face surfaces of a Van Lock vending machine lock and key. Slots at the top and bottom of the lock face match raised surfaces (indents) at the top and bottom interior key surfaces. Another view of the lock and key is shown in *photograph 4*. A channel around the circumference, just behind the face of the lock, is where the indents of the key ride as the key is rotated. The lock and key are effectively locked together in *photograph 5*. The two will not disengage until the key is rotated back to the original key insertion position.

Lock Cylinder Disassembly and Service

When you think of tubular locks, you often think of difficult or awkward servicing procedures. Not many locksmiths do routine disassembly and service of standard tubular key style locks. Before taking one of the locks from Van Lock apart, I thought it might be a bit tricky and awkward. Much to my surprise, they are relatively easy to service. The basic

trick to disassembly can be seen in *photograph 6*. At the left is a vending machine lock, and at the right is a "C" series cam lock. In the middle, separately, is a locating pin and ejector screw. The core, or lock cylinder, is contained within the housing of each separate type of lock body. In either case, the locating pin must be removed in order to pull out the core.

To start the process, you need to thread the ejector screw into the locating pin as far as it will go (finger strength), as in the cam lock at the right in *photograph 6*. This should get the screw into the locating pin as far as its own length, only to bottom out in the drilled hole in the core (where the pin seats). Then with a small tip slotted screwdriver, turn clockwise, to force the locating pin out of its hole. (See *photograph 7*.) When the pin comes out far enough, you can just pull the assembled pin and screw out. (See *photograph 8*.) You can now see the empty hole where the locating pin had been previously pressed to retain the core inside the lock housing.

With the locating pin removed, the lock core will pull out very easily. (See *photograph 9*.) If it is a cam lock, and

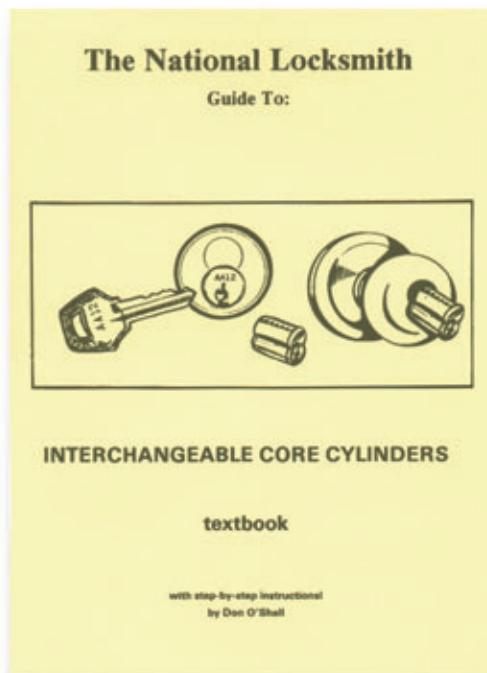
you did not first remove the lock nut and cam, those parts will still retain the core inside the housing. Since the locating pin would be out, the core would pull out after the cam was removed. The core is completely out of the lock housing in *photograph 10*. At this point, the core (or lock cylinder) does not just fall apart. There is a retaining ring toward the back, to which I am pointing with the tip of my screwdriver.

The servicing steps that follow will be similar between the slightly different core designs of the various locks, but I did have a bit of a surprise when removing the core from the vending lock version. With the locating pin out, I started to push the core out of the housing. I had to reach through the locating pin hole with a tool to move it outward. Not thinking that the spring bolt was under any measurable tension, I was taken aback when the core disengaged and the bolt and spring shot out of the housing. It might be a smart idea to be ready to catch the spring bolt and spring, when they start to come out after the core is dislodged.

Picking up where I left off the

paragraph before, you should slide off the retaining ring. You may need the tip of the screwdriver or some other tool to pry it loose. With the retaining ring off, the core washer will push outward slightly. (See *photograph 11*.) The tension of the tumbler springs is what pushes the core washer out. This is not the same force as when the spring bolt was pushed out of the vending lock. It is much less. In fact, the core washer just moved a fraction of an inch, and with minimal force. You need not be overly concerned about pieces and parts "shooting" apart, but you must remember that with the retaining ring off, everything can "fall" apart still. You will either want to hold the core with the face end downward so that gravity will keep everything together, or you will want to hold things together when tipping the core in other directions.

The core washer acts as a tumbler spring cover. When you remove it the tail ends of all seven tumbler springs stick out from each of the tumbler chambers arranged in a circle. (See *photograph 12*.) Because no correct operating key is engaged, the front and rear sleeves of the core are still



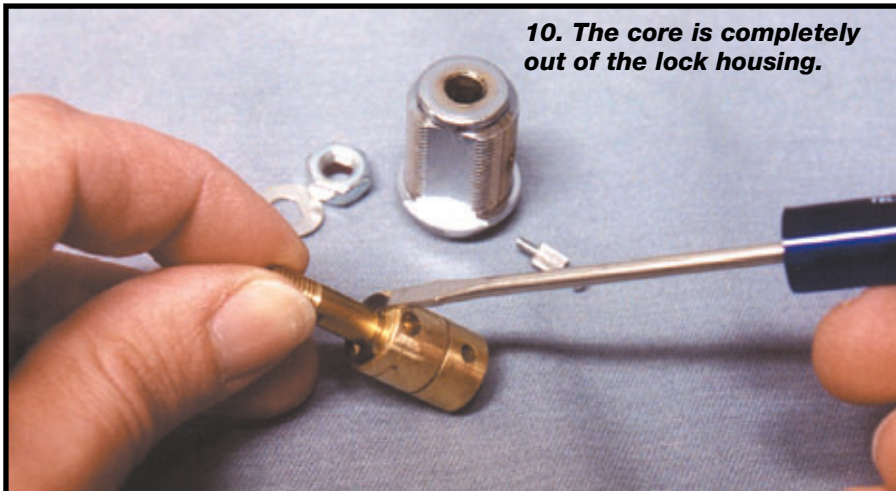
Interchangeable Core Cylinders

Covers all this...

- Best/Falcon/Arrow/Eagle/(A2)
- Best A3
- Best A4
- Corbin X Removable Core
- Corbin Z Removable Core
- Russwin Removable Core
- Emhart System 70 Removable Core
- Sargent Removable Core
- Schlage, Yale, Lockwood
- Medeco Removable Core

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10. The core is completely out of the lock housing.



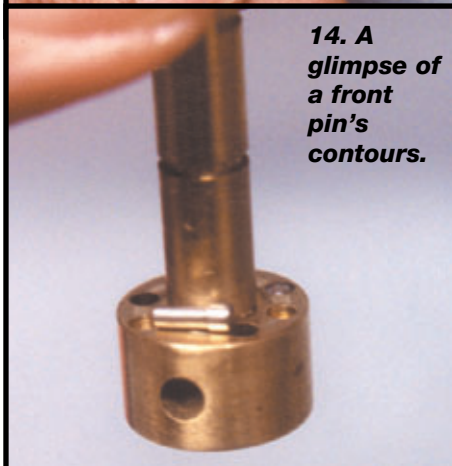
11. With the retaining ring off, the core washer will push outward slightly.



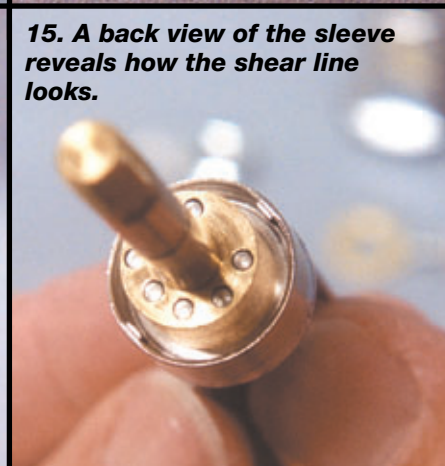
12. All seven tumbler springs stick out from each of the tumbler chambers arranged in a circle.



13. I have partially separated the front and rear sleeves of the core.



14. A glimpse of a front pin's contours.



15. A back view of the sleeve reveals how the shear line looks.

locked together by the rear pins crossing the shear line. The sleeves will not rotate separately, but they can be slid apart for further disassembly.

Inside the Core

I have partially separated the front and rear sleeves of the core. (See photograph 13.) The front sleeve appears to be physically part of the center post around which key rotation takes place. The rear sleeve is moved backward but is still positioned over the center post. The tumbler springs and rear pins are currently residing in the rear chambers, although slightly sticking out at both ends. The front pins are in the front sleeve, and currently concealed from view.

A glimpse of a front pin's contours can be seen in photograph 14. Notice that the pin has a narrow end and a wide end. Because the fronts of the front pins are flush (even) with the face of the core, you must presume that the wide end of the pin is toward the back which prevents the pins from just coming out through the face end of the lock. Like other pin tumblers, the pins come in different lengths. In order for there to be no tell tale signs of the pin's length by how far short of the face of the core they lie, the narrow front end of all the different size pins has the same length. The wider back end of the pins will have a greater length for the longer pins.

I have engaged the key to the outer sleeve of the core, with all the front pins assembled. A back view of the sleeve reveals how the shear line works for this type of pin tumbler lock cylinder. (See photograph 15.) If the core was assembled, the front surfaces of the rear pins would mate at the same surface, and the key would rotate.

Next month I will complete the lock servicing procedures and some of the rules and specifications of the tumblers. An explanation of the "Vanamatic" keying option will also be given. I will also demonstrate how a Van Lock key is "assembled". It is an interesting key that is built and not cut. I will also explain some of the other very interesting products, including the electronic audit trail products. I think you will find it rather interesting.

The Advantages of Advantex *by Jake Jakubowski*

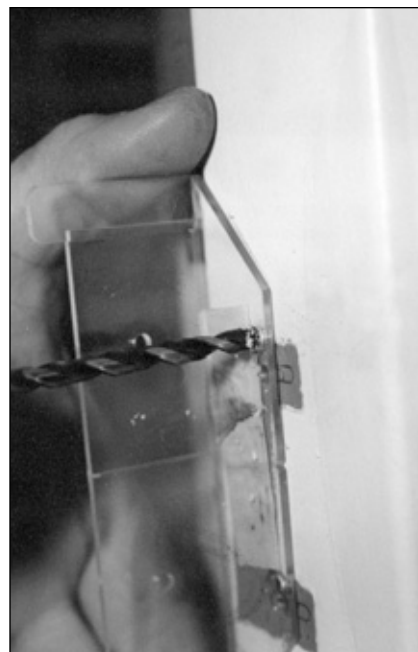


1. The ubiquitous watchman's time clock.

2. The newly designed Detex Advantex.



3. This door had a malfunctioning American Device on it.



4. The multi-purpose template used to locate the mounting plate.

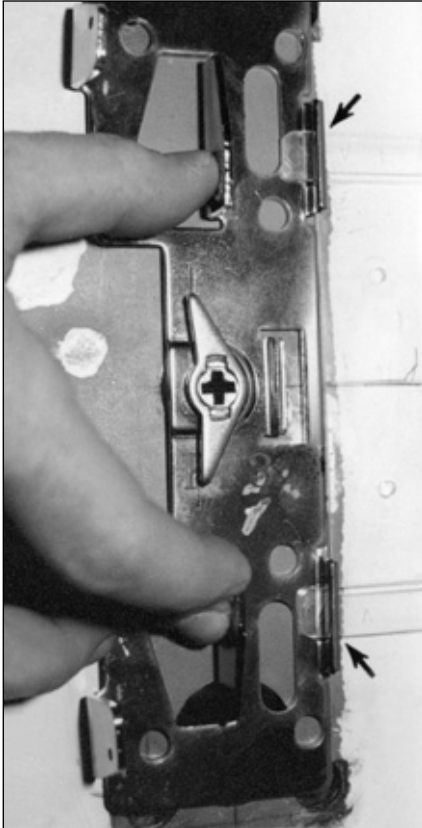
Not quite a hundred and twenty-five years ago, Abraham A. Newman started a watch clock business. By 1924, Newman had pretty much corralled the watch clock industry in the United States and his company became what is now known as the Detex Corporation.

In case you might be wondering what a watch clock is, *photograph 1* shows one of the ubiquitous watchman's time clocks. Some of you may remember seeing such a clock being carried by a night watchmen or railroad worker.

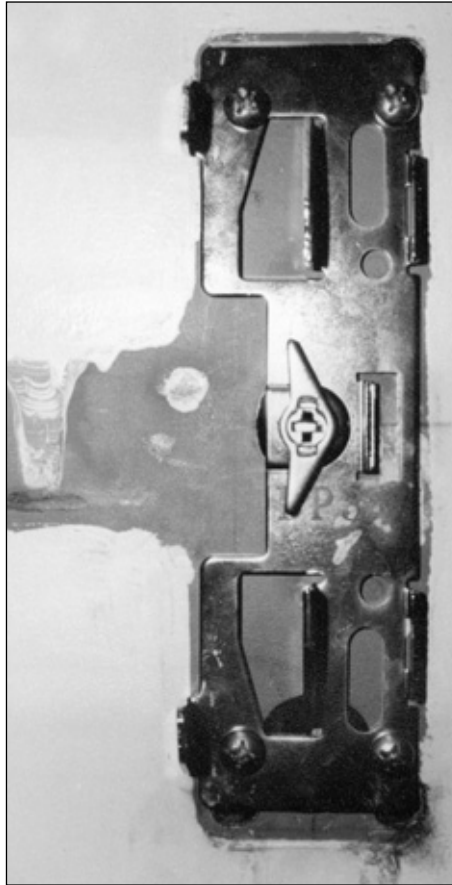
In the early 1960's Detex Corporation added the alarmed exit (ECL) device to their growing line of security devices. Over the years the product line continued to expand and today, Detex's latest innovation is the Advantex series of panic exit hardware. (See *photograph 2*.)

Applications for the Detex Advantex UL Listed panic/fire exit device, range from single-point rim-mounted exit installations, to surface-mounted three-point fire exit devices; with or without outside trim. Aside from its sleek good looks (all stainless steel exterior casings) Advantex is easily retrofitable to a wide variety of brands (Sargent, Von Duprin, etc.) and configurations.

Thanks to the newly designed mounting bracket and plastic (not paper) templates, the Advantex installs very quickly and accurately - with no guesswork. Even when installed as a surface mounted vertical rod device, I found



5. The tabs on the latch locator template insure that the mounting bracket is perfectly aligned on the door.



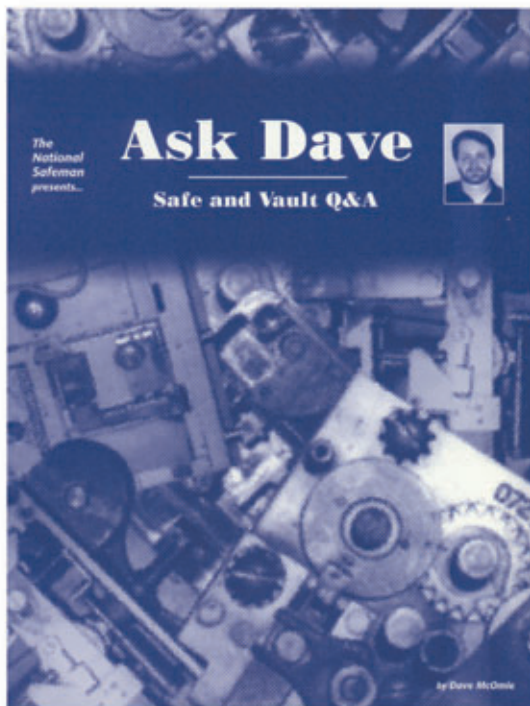
6. The mounting bracket attached to the door.

the Advantex the absolute easiest vertical rod device I ever had to install! The Detex boys put some serious thought into the design and installation applications of this device and it shows.

Let me show you what I'm talking about so you don't get the idea that this ol' boy is all show and no go.

Photograph 3, is of a door that had an American Device on it that was inoperable. As you can see in the photograph, the device has already been removed and the original prep exposed. This door had a lever handle with a Sargent mortise cylinder on the outside and no dog down feature on the device.

On this door I am going to install the Advantex with an outside trim package. The first step in this installation is to place the plastic strike locating template at the forward edge of the door-stop on the frame and drill the strike mounting holes. (*See photograph 4.*) What you may not be able to see in this photograph is the small piece of double-faced tape that I used to hold the template in position.



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7. Securing the spring-loaded tailpiece and bracket to the outside trim housing.



8. The new Sargent retrofit outside trim package.

With the door closed, the Advantex mounting bracket is positioned on the door. The tabs on the latch locator template insure that the mounting bracket is perfectly aligned on the door. (See photograph 5.) The guesswork and hassle is eliminated, what a great feature!

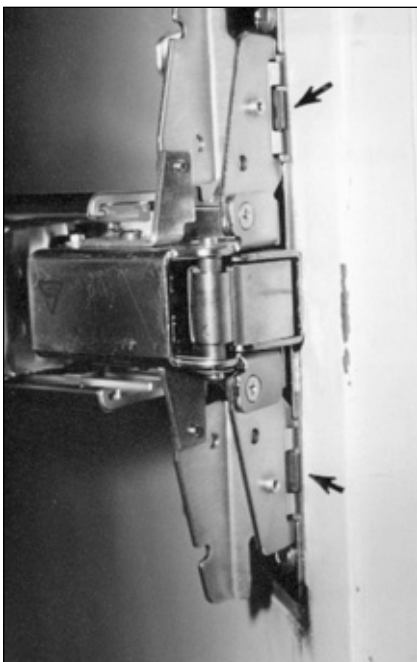
The mounting bracket can now be attached to the door and although you can't see it, the outside trim is attached as well.

(See photograph 6.) If you look closely at the actuator in the center of the mounting bracket you can see the end of the tailpiece from the outside lever handle.

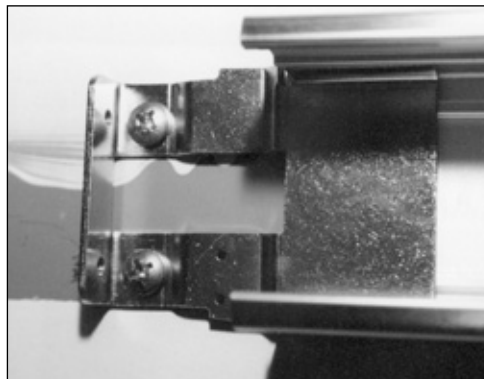
The outside trim packages for the Advantex is non-handed and field reversible. The procedure is easy and the instructions are clear. In photograph 7, I'm securing the spring-loaded tailpiece and bracket to the outside trim housing.

Photograph 8, shows the new Sargent retrofit outside trim package, with keyed mortise cylinder mounted on the door. Is that pretty, or what?

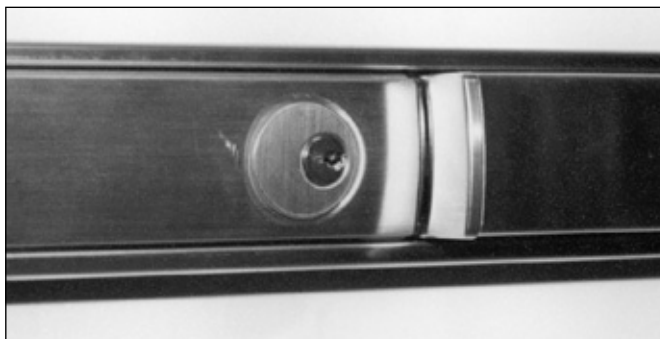
Remember the tabs on the strike-mounting template that I pointed out in photograph 5? Here's where the purpose of those tabs becomes apparent. In photograph 9, you can see the mounting bracket on the door and the head of the Advantex device pushed into the mounting bracket. The arrows point to the tabs on the mounting bracket that slip into the slots in the head of the device used to align the mounting bracket earlier in the installation. I'm telling you, the



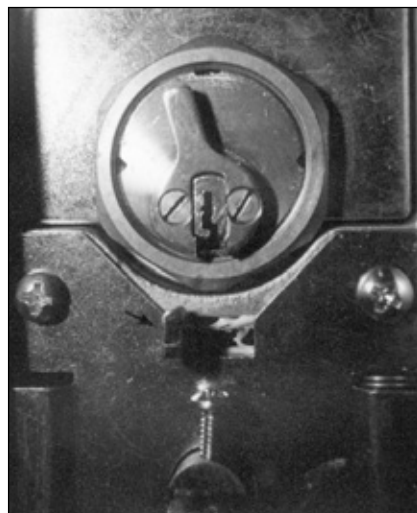
9. The tabs on the head of the device, that slip easily into the holes in the mounting bracket.



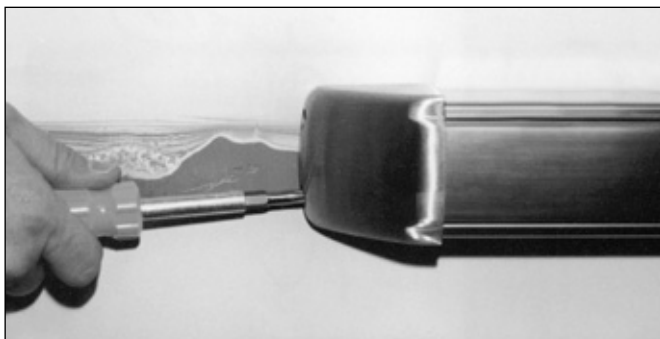
10. The bracket secured to the door and the bar in position.



12. Trim plate with the dog down cylinder installed in the bar.



11. The keyed dog down cylinder mounted on the trim plate.



13. The trim with the dogging cylinder is held in place by the end cap of the Advantex.

Continued from page 48

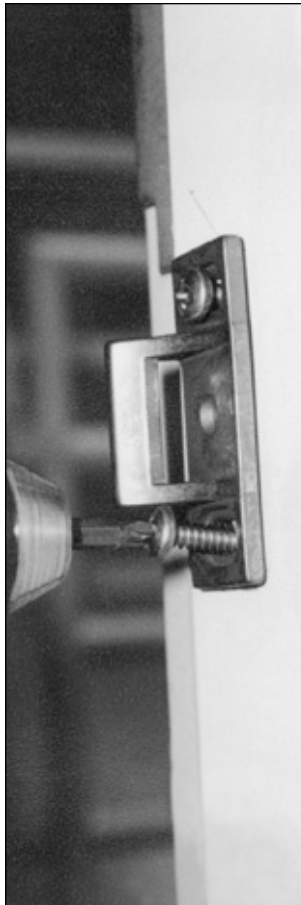


14. The completed installation.

Advantex install sequence is foolproof.

Because of the way the head slips into the mounting bracket, the bar is pretty well stabilized. Unlike other devices, the weight of the bar is not pulling down on the unsecured end making alignment and mounting difficult. I used a small level to level the bar, inserted the mounting bracket, and marked my holes for six bolts. *Photograph 10*, shows the bracket secured to the door and the end of the bar in position.

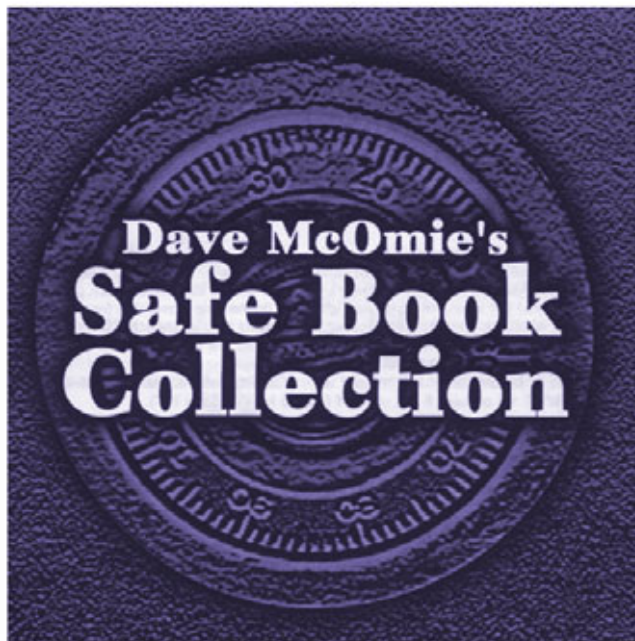
Photograph 11, shows the keyed dog down cylinder mounted on the trim plate. You can see the



15. Installing the latch strike.



16. This is the template for the surface-mounted vertical rods.



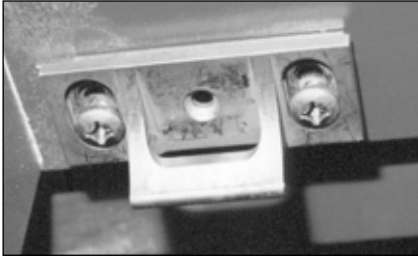
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This CD contains every book Dave has ever published.

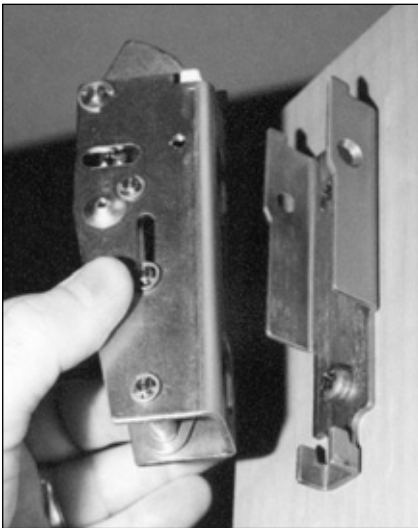
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#DMCD - 1



17. The holes drilled, tapped and the strike installed.



18. Attach the mounting bracket to the door.



19. Insert the latch mechanism.



20. Tighten the two setscrews to secure the control rod.



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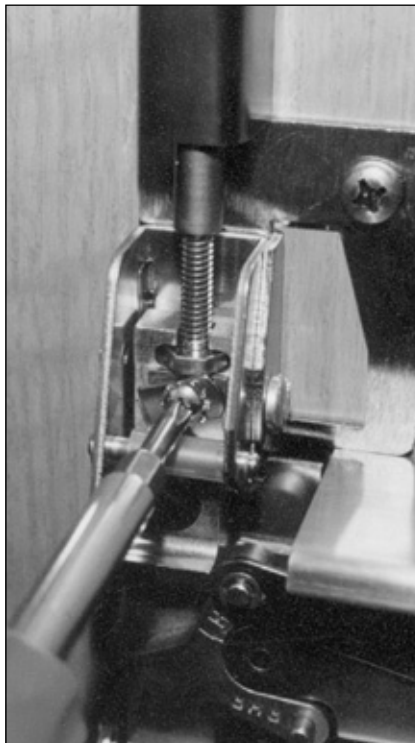
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#DMCD - 2



21. The top latch installed with trim cover in place.



22. The lower end of the top rod adjusted and secured.

actuator tab that is activated by the cam on the cylinder to operate the dog down.

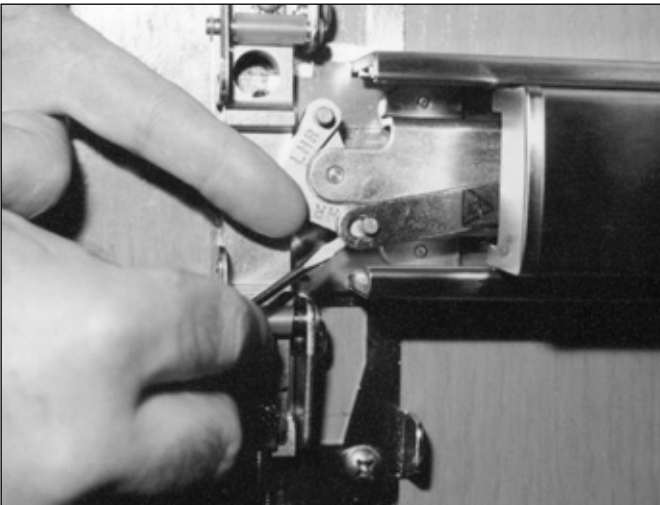
Photograph 12, shows the trim plate with the dog down cylinder installed in the bar. The trim plate simply slides in from the end and is held in place by the end cap of the Advantex. (See *photograph 13*.) Another notable feature of the Advantex is the curved end cap. Unlike other devices where the caps are squared off, the Advantex end cap is designed to allow carts, buggies, dollies, wheel chairs and furniture being moved through the door to be deflected rather than destroying the end cap.

Photograph 14, shows the completed installation of this particular device. It looks great doesn't it?

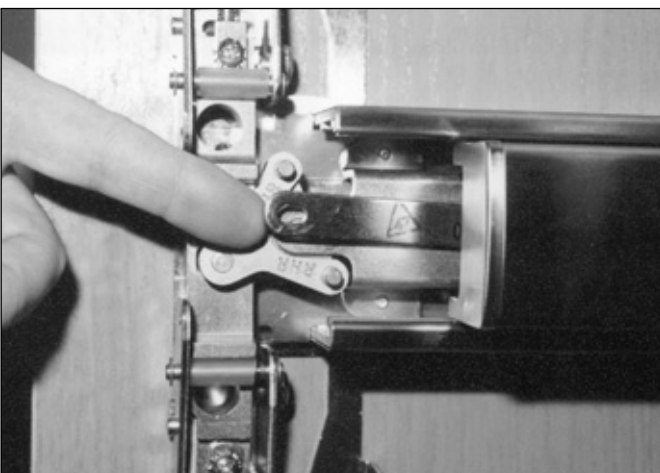
To complete the installation my son loosely installs the latch strike. (See *photograph 15*.) Later on, we will make the final adjustments to the strike, tighten down the screws and then add a "stop" screw to maintain the strike's alignment.

Okay! Earlier I said the Advantex could be ordered as a surface mounted, vertical rod device and that the installation of that configuration was quick, easy and uncomplicated. You might have thought, "Yeah, right!" If you have ever installed a surface mounted vertical rod exit device you know what a nightmare it is. Not to mention the time it takes to get it right. The Advantex surface mounted vertical rod has taken all the guesswork out of the installation. After doing one, you will never want to install another manufacturers surface mounted vertical rod. It's a dream.

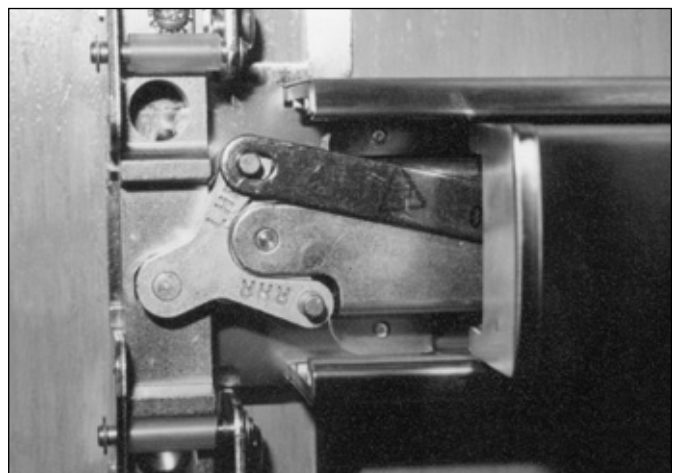
That ease of installation is the result of some well thought out engineering and Detex's use of plastic locating templates rather than paper ones. With a vertical rod Advantex installation, you have two templates in the kit. One is for determining the latch location and the center line of the mounting bracket and



23. Remove the "E" clip from post on pivot plate.



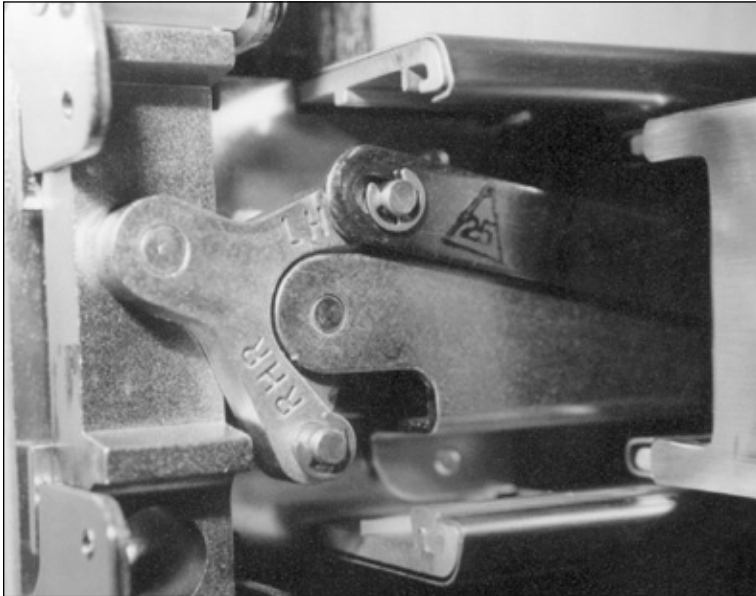
24. Pull the gold colored actuating rod away from the post.



25. Lift the rod and place it over the post marked LHRB.

Continued from page 52

26.
Replace
the "E"
clip and
the
handing
is
changed!

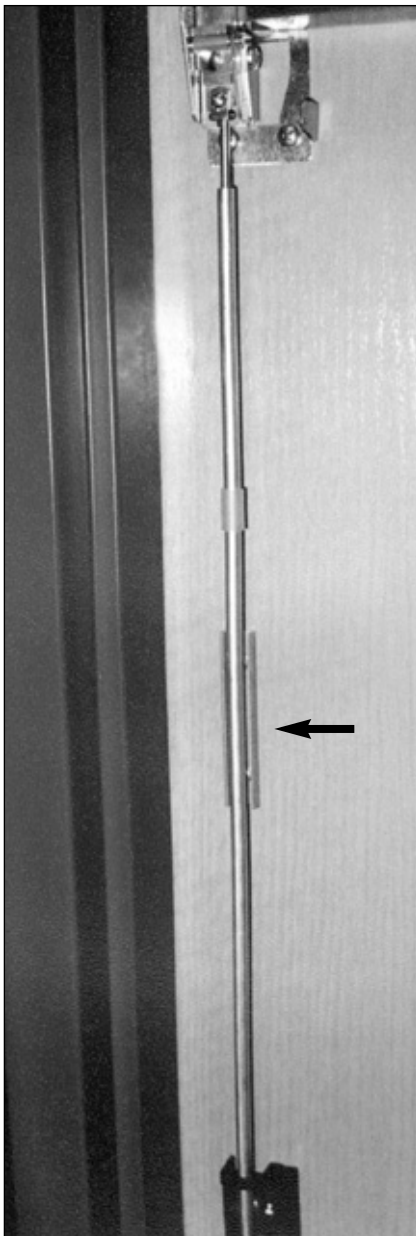


bar, and the other one is to precisely determine the location of the header strike and upper latch. That same template then doubles as the locator for the lower strike and latch! *Photograph 16*, shows the second template.

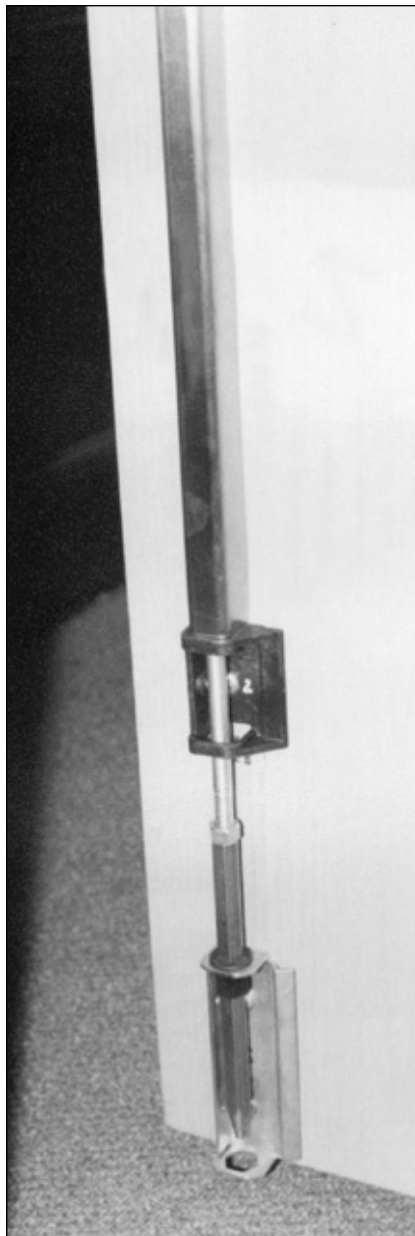
With the door closed, the template is placed against the edge of the door and butted against the stop at the top of the frame. The strike's screw holes are marked (as well as the location for the top latch mounting plate) and the holes drilled, tapped and the strike installed. (See *photograph 17*.)

Having already marked the location of the top latch mounting plate with the template, it's a simple matter to attach the mounting bracket to the door. (See *photograph 18*.) Insert the latch mechanism, which slides in place on mounting tabs. (See *photograph 19*.)

After installing the push/pull control rod, simply tighten the two



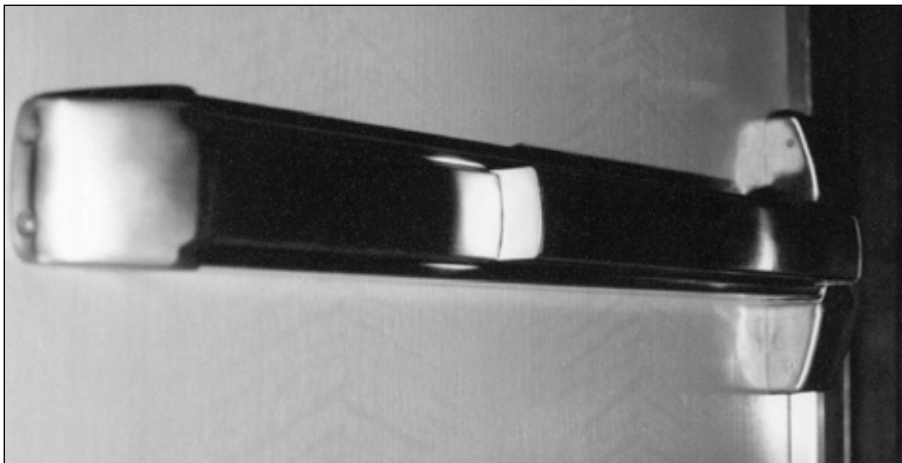
27. The bottom rod after being installed and adjusted.



28. The lower bracket(s) and latch assembly.



29. The cover is angled and surrounds the bottom of the rod trim.



30. The completed installation with all the caps, covers and clips in place.

setscrews in the latch mechanism to secure the rod to the latch. (See photograph 20.)

The trim cover plate is then installed and secured with two screws. (See photograph 21.)

The lower end of the top control rod is adjusted for length with a hex head screw and then secured to the head of the Advantex. (See photograph 22.)

Surface mounted vertical rod devices tend to be handed. The Advantex is no exception. What is exceptional about the Advantex is that it is non-handed and the necessary handing is easily field reversible.

To change the hand of the Advantex, first take the "E" clip off a post of the pivot plate marked "RHR" for Right Hand Reverse and "LHR" for Left Hand Reverse. (See photograph 23.) Then gently pull the gold colored actuating arm off the post. (See photograph 24.) It was originally in the RHR position. Move the actuating arm and place it over the post marked LHR. (See photograph 25.) Replace the "E" clip to prevent the actuating arm from falling off and the handing is changed! (See photograph 26.)

The lower rod is installed pretty much the same as the upper rod. The template to locate the lower latch and strike are simply reversed and used at the bottom of the door. In photograph 27, you can see the rod after being installed and adjusted. The arrow points to the bracket that holds the rod cover trim on.

Photograph 28, shows the lower bracket(s) and latch assembly.

Note the rod cover plate is already in place. Photograph 29, shows the lower latch trim cover. Note that the cover is angled and surrounds the bottom of the rod trim. This is to prevent wheels from carts, etc. from knocking the cover plate off. Ever find a lower vertical rod latch that's been destroyed by wheeled carts or other destructive devices?

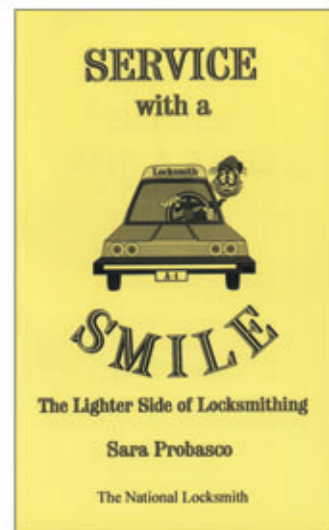
Finishing the vertical rod installation is pretty much like the first single-point locking device. The end-mounting bracket and end cap is secured and the surface mounted vertical rod Advantex is complete. (See photograph 30.)

I have installed a lot of panic/exit hardware over the years. Vertical rod installations — both concealed and surface mounted — have been among my least favorite hardware installs. However, when I was doing the Advantex installs, all I could say was "Wow, that's nice." I have a great appreciation for this well-engineered product that was designed from the ground up with the installer in mind. The Detex Advantex is an extremely nice, aesthetically pleasing exit device. Bravo!

For more information on Detex's Advantex, call Detex as 1-800-729-3839 or visit their web site at www.detex.com. When you call, tell them I told you to. That won't get you a discount, but it can't hurt! Circle number 331 on Rapid Reply.

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#SWS

Literature & Brochures

Adesco

Adesco's 2001 Dealer Catalog and Retail Price List offers the most up to date product information on the Adesco line available. All safe models are segmented into product categories, with a complete description of each. Details include safe rating, inside and outside dimensions, clear door opening, interior options, weight, cubic capacity and retail pricing. Special construction safes and optional extras are also included.



CIRCLE NUMBER
304

For more information: Adesco, 16720 Garfield Ave., Paramount, CA 90723. Phone: (800) 821-6803; Fax: (562) 408-6427.

Boyle & Chase Product Catalog

Boyle & Chase is always your best source for Ingersoll-Rand's Security & Safety products. They stock the full line of Schlage, Von Duprin, LCN, Locknetics and Glynn-Johnson products.

For reliable service and quick delivery call (800) 325-2530.

DiMark International Product Catalog

DiMark International, an Importer and Distributor, is happy to include a free catalog with any order. This interesting catalog includes hard-to-find furniture locks and keys, locksmith

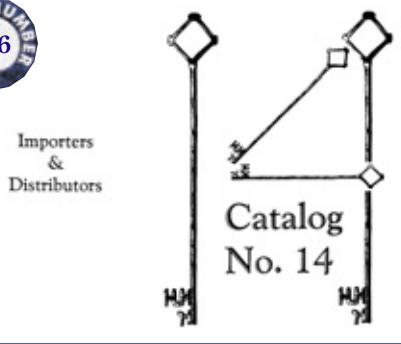


CIRCLE NUMBER
305

DiMark International, Inc.
3117 Liberator St., Unit A
Santa Maria, CA 93455 U.S.A.

(805) 922-1182
FAX (805) 928-8034

CIRCLE NUMBER
306



tools, key machines, security and cash boxes, assorted locks, key identifiers, key tags and many other items of interest to the commercial and industrial locksmith. There is a small mailing charge when a catalog is requested outside an order and the charge is refundable against future orders.

For more information: DiMark International, 3117 Liberator Street, Unit A, Santa Maria, CA 93455. Phone: (805) 922-1182; Fax: (805) 928-8034.

DOM

This 44 page catalog shows a selection of DOM high-precision locks



CIRCLE NUMBER
307

including various cam locks, locks for central locking action (e.g. file cabinets), glass sliding door locks and desk locks. Drawing dimensions are shown in metric and descriptions are in German, English and French.

The catalog is available by contacting D.L. Services at (877) 326-5625.

Dugmore & Duncan Product Catalog

CIRCLE NUMBER
308

Founded in 1864, Sargent Manufacturing Company is a market leader in the manufacture of architectural hardware, including locksets, cylinders, door closers, exit devices, electromechanical products, and access control systems for new construction, renovation and replacement applications.

For more information: Dugmore & Duncan, 30 Pond Park Road, Hingham, MA 02043. Phone: (888) 384-6673; Fax: (888) 329-3846.

Fradon Lock Company Product Catalog

Catalog #1, Automotive Resources - New for 2001! Automotive Resources attempts to put our customers' hands current information about available automotive locks, ignitions and parts, keyless entry remote batteries, and

Continued on page 58

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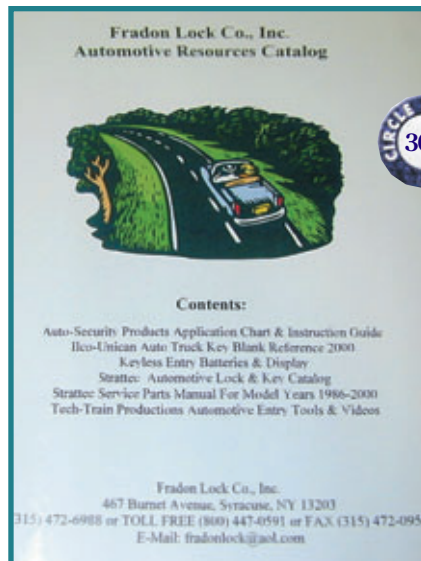
NLAA One Year Membership

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The big problem in automotive locksmithing is the tremendous amount of information you need to have at your fingertips.

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car opening tools & videos. Pricing is provided where supplied by the manufacturer. Catalog #2, Safes, Safe Moving Equipment & Locksmith Supplies. Contains information on safes they stock, including Amsec, Gardall, Gun Vault & Hayman. Safe locks and safe servicing parts are also included along with safe moving equipment and general locksmithing supplies. Many users find this catalog to be a valuable source of information they can't easily locate elsewhere.

For more information: Phone: 800-447-0591; Fax: (315) 472-0958; E-mail: fradonlock@aol.com

G-U Hardware Product Catalog

From G-U's new breed of security line, the "Eagle" automatic latch system automatically and independently engages at each latch with a G-U patented design. No lever lifting is



required to engage locking points; Multi-point latches extend to 3/4" (20 mm) and become deadbolts when the door is closed. The entire system is easily locked and unlocked by turning a thumb turn 90-degrees inside, or with a key outside. Increased security and weather tightness in all of G-U's new breed are insured in their state-of-the-art products with key-in-knob cylinders for easy re-keying, Schlage "C" keyways, a typical US design with deadbolt above latch and precision manufacturing makes all G-U products stand above the rest.

For more information contact G-U Hardware, Inc., 11761 Rock Landing Rd., Suite M6, Newport News, Virginia 23606. Phone: (800) 927-1097.

Jensen Tools Catalog

Jensen Tools has just released their updated 300 page Master Sourcebook for spring 2001. This full color catalog contains thousands of products from leading manufacturers, including many items that are new to the industry. The new Master Sourcebook features an extensive selection of tool kits, cases and carts, test equipment, hand, power and specialty tools, wire and cable soldering products, workstations, shop supplies, storage and handling equipment, lighting and optical products, field accessories and much more.



For more information: Jensen Tools, Inc., 7815 S. 46th Street, Phoenix, AZ 85044. Phone: (800) 426-1194; Fax: (602) 438-1690.

Keedex, Inc.

Keedex has a new catalog, covering their wide range of quality products. Keedex products include automotive

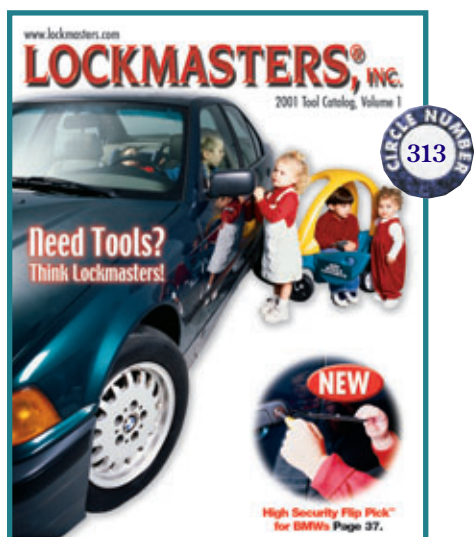


tools, safe tools, shop tools, locksmith supplies, weldable gate boxes and access control related items. Information is also available at the Keedex web site: www.keedex.com.

For more information or a free catalog, contact Keedex, Inc., 12931 Shackelford Lane, Garden Grove, CA 92841. Phone: (714) 636-5657; Fax: (714) 636-5680.

Lockmasters 2001 Tool Catalog

Bringing to automotive and hardware locksmiths what they brought to safe technicians, Lockmasters is proud to announce the new 2001 Lockmasters Tool Catalog Volume 1. From the beginner locksmith to the high-tech specialist, Lockmasters provides a range of tools for all needs. Car opening tools and manuals, tryout and lock tools from your favorite manufacturers. Plus, Lockmasters bring you automotive transponder keys and equipment, the BMW High-Security



Flip Pick, and the SKT Wafer Lock Reader. From the simple to the high-tech, Lockmasters has the tools for you. See it all in this latest issue of Lockmasters' tool catalog.

To obtain a free copy call (800) 654-0637.

Mayflower -Your Advanced Security Authority™

Mayflower Sales, distributor of access control products, architectural hardware and safes for over 80 years presently issues two catalogs with another on the way. The Security

Source Book™ features 224 pages of access controls and electromechanical hardware, plus parts and related products. The Safe and Vault Source Book features all major brands of safes including safe locks and parts. With over 100 major brands in stock, Mayflower provides "in-depth" information, unparalleled selection, service and support to the locksmith.

Mayflower is located at 614 Bergen Street, Brooklyn, NY 11238. Phone: 800-221-2052; E-mail: pilgrim@mfsales.com; Web: site at <http://www.mfsales.com>.

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McDonald Dash Catalog

The McDonald Dash catalog contains products that are essential to the locksmith industry. Locks, tools, key machines, key blanks, door closers, exit devices and many other items can be found throughout the catalog. It also contains keyless entry locks, exit alarms, and electronic locks. With over four hundred pages in the catalog, the security professional should be able to find nearly everything necessary for completing the job.

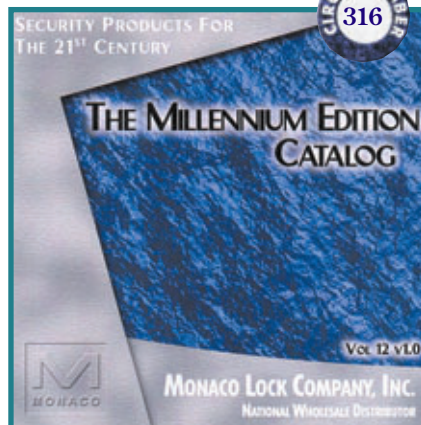


For more information: Phone: (901) 797-8000; Fax: (901) 336-0005.

Monaco Lock Company Catalog

Monaco Lock Company offers a new CD catalog (v.1.0) that will help you find products by manufacturer with greater ease and in less time. Individual pages may be printed out or you may work directly from your computer screen. The catalog is readable using the latest version of

Adobe Acrobat, which is included on the CD for your convenience. As in all of their catalogs, you will find detailed product information as well as parts breakdowns, exploded views, wiring and technical information.



For more information: Phone: (800) 526-6094; Fax: (201) 659-7970

PRO-LOK

PRO-LOK's 2000-2001 Catalog contains 56 pages of products that they manufacture. Each product includes a full color photo, part number and description/details of the item. Whether you're in the need for Car Opening Tools, Kits, Car Opening Manuals, Lights, Key Machines, Key Decoder, Key Hooks, Gun Locks, Installation Templates, Lock Installation Jigs, Automotive Tools, Automotive Lock Servicing Manuals, Mace, Picks, Pick Sets or Safe Bits; PRO-LOK has it all.

For more information: Phone: (714) 633-0681; Fax: (714) 633-0470.

Select Products Limited

Select Products Limited is a leading

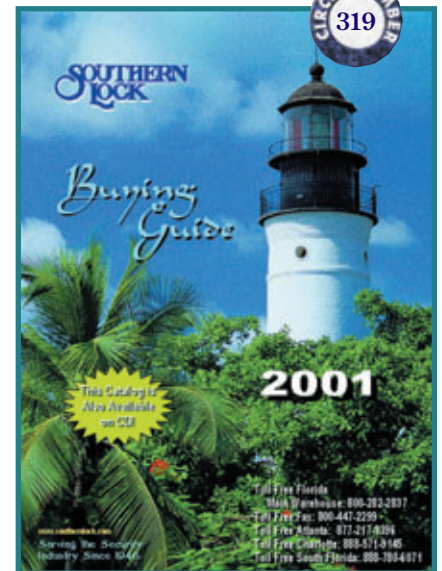


manufacturer of high quality architectural aluminum continuous geared hinges. The full product line is available for retrofit work or new construction with aluminum, hollow metal or wood doors. Patented Fire Ratings are available for up to three hours. Full-Surface Select hinges are used to repair failed, worn, or damaged butt hinges while saving the cost of replacing doors.

For more information: Phone: (800) 423-1174; Fax: (616) 323-4433.

Southern Lock Supply Company

Southern Lock has been a wholesale distributor of security products and supplies since 1946. With four locations, a talented group of outside sales representatives, and a capable inside staff, they are able to achieve their goal of providing customers with quality products and the best service possible. Their 500-page catalog is filled with items ranging from simple door locks to state-of-the-art electronic access control. A CD-Rom version is also available.



For more information: Phone: (727) 541-5536; Fax: (727) 544-8278.

STI Sell Sheets

Safety Technology International has sell sheets on most of its products, including the STI Exit Stopper, which helps stop unauthorized exits or entries through emergency exit doors. If the protected door is opened, the electronic Exit Stopper emits an ear piercing alarm for 30 seconds, three minutes or continuously as preset by the user. A key operated override silences the alarm and allows

320

STI EXIT STOPPER®

To stop unauthorized exits/entries through emergency exit doors.

There is a highly effective way to allow you to any unauthorized exits or entries through any emergency exit door. By doing so, it can serve as a comprehensive security device and help stop theft as well.

How it works:

The patented door is opened, the electronic Exit Stopper sends an alarm signal to the alarm system. The alarm system will then sound the alarm and allow authorized exits. Exit Stopper is fitted with a long life alkaline battery and features a low battery warning facility. It is available in red or green for almost any type of door, mounting or installation, including remote placement of the alarm.

Features:

- Upon installation, you can select on site whether to use as an alarm or intercom.
- May be mounted on top, right, left or rear to almost any door.
- Intersix built-in universal code and system.
- May be set for opening 120dB warning horn or siren (if available).
- To make alarm ready, you can set to sound for 30 seconds, 1 minute or continuously (alarm deactivated with key supplied).
- Easy to install, attach via expansion door hinge, horizontal bar type units, and provided for all emergency exits.
- Available in red or green.

STI Technology International, Inc.
1200 Airport Blvd., Westwood, NJ 07675-1000
Phone: (201) 461-1000 • Fax: (201) 461-1001
Web: www.sti.com

STI Technology International (Europe) Ltd.
Unit 1, Stone Road, Westwood Road, Stone, Staffordshire, ST15 8NR, England • Telephone: +44 (0) 1543 307 3000
Telefax: +44 (0) 1543 307 3001 • E-mail: sti@sti.com • Web: www.sti.com

authorized exits. The sheet has all necessary dimensions and technical information, including installation instructions and exploded views.

For more information: Phone: (800) 888-4784; Fax: (248) 673-1246.

Stone & Berg

The Stone & Berg Locksmith Catalog and Price Book is an indispensable reference tool created just for the locksmith. The catalog

consists of a case bound binder filled with up-to-date product information in the form of manufacturer supplied catalogs and price sheets. The case bound Price book is divided into two sections and prefaced by an introduction. The sections are: locks & hardware and key blanks. Each section provides a page(s) of product numbers, descriptions and pricing on all stock products including parts

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STONE & BERG
WHOLESALE LOCKSMITH SUPPLY
PRICE BOOK & CD

for that manufacturer. Their price book is also available in a CD-Rom format. What makes this CD, Catalog and Price Book so unique is the update service that they provide with it. Every three to four months they will send you an updated CD, price pages and new catalog information.

For more information: Phone: (800) 225-7405; Fax: (800) 535-5625.

Tufloc Brochure

Tufloc's high security lock brochure highlights how the four different models work on service vehicles. The locks feature Medeco high security cylinders, supplying more than 250,000 non-interchangeable combinations for a five-pin cylinder and four levels of key availability. Keys can be keyed different, keyed alike or master keyed. Locks can be welded or mounted using the special bolts, which are provided. Besides flush mount, Tufloc locks can accommodate a corner 90-degree mount (left/right) or an outside corner mount. In addition to high security locks, Tufloc has a full line of weapon racks and lockers for vehicles and buildings.



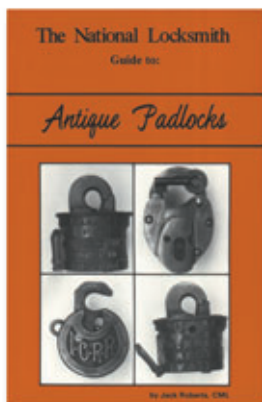
AutoSmart Advisor

Contains virtually every car and part known to man up through 2000.

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For more information: Phone: 800-321-0870; Fax: (330) 452-2557; Web: www.esmet.com.

Antique Padlocks



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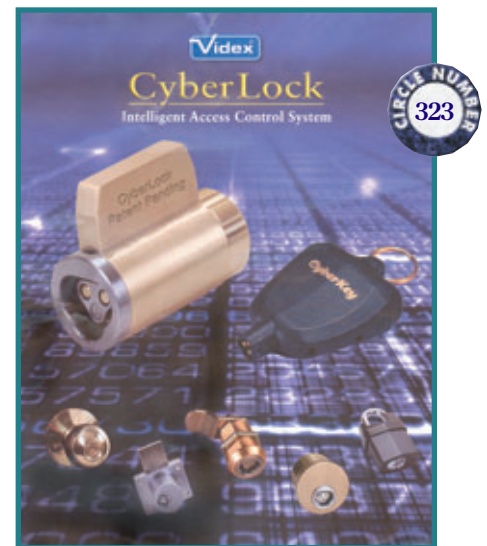


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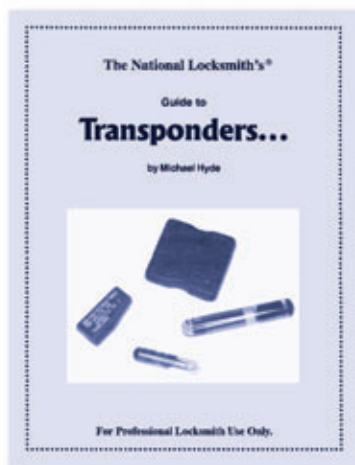


Videx CyberLock Catalog

The Videx CyberLock catalog contains detailed information on the CyberLock and CyberKey. CyberLock is an intelligent lock cylinder that allows quick and easy conversion of existing mechanical locks into full-functioning access control systems. The CyberLock system consists of two components: the pickproof CyberLock and its companion CyberKey. The CyberLock cylinder installs in tubular knob sets, lever locks, rim locks, mortise locks, and padlocks. Each CyberKey contains a unique ID and controls access at specific days and times. Each entry is recorded in both the CyberLock and CyberKey.



For more information: Phone: (541) 758-0521; Fax: (541) 752-5285. **TNL**



TNL's Guide to Transponders

Over 350 pages in a handy binder to accept updates as needed.

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#TS - 2001



REDI-LINE is POWERING up



It's almost impossible these days to hit the road for a service call without some means of generating AC power for your tools. (See photograph 1.) There are several available means for producing AC power for bench mounted tools, key cutters, hand tools or other AC powered devices — gasoline powered generators, battery operated static inverters and battery operated generators.

All of these methods of making AC power have both benefits and drawbacks. Gasoline generators are both smelly and noisy, plus, relative to other methods of making AC power they are typically more expensive. However, if the job is a good long way from a place where you can park your van, a gasoline powered generator can be worth its weight in gold.

Static inverters that run from the vehicle's electrical system have made significant gains in dependability and efficiency in the past few years. Static inverters produce

clean electricity, so if you're planning to watch the big game from the comfort and privacy of your vehicle, they can accommodate sensitive electronic devices like a television. (If you think you may want to do that, don't let the boss read this article!)

Although inverters have come a long way, they are still not as robust as the battery powered generator, and if the inverter ever stops producing electricity you can pretty much forget about fixing it yourself.

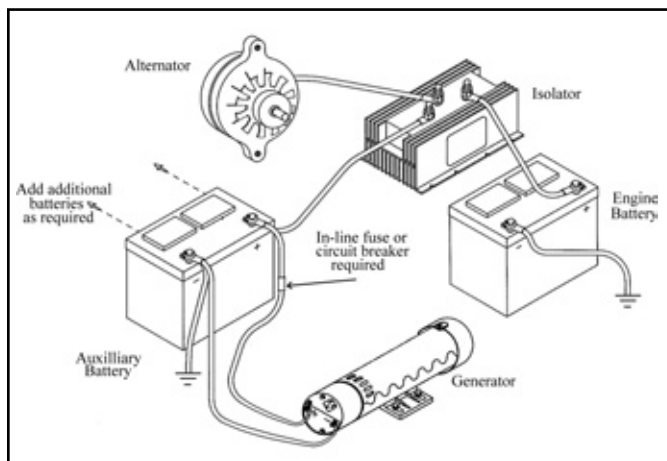
Which brings us to the battery operated generator. Generators are both easy to service and very dependable. They supply reliable AC power for lights, tools — even appliances. Since the output voltage and frequency vary with the electrical load and are unregulated, televisions and sensitive electronics might not be tolerant of the waveform a generator creates, but the transformer for your laptop, your key grinder, lighting and your variable speed drill will work great. (See photograph 2.)



1. (Left) Reliable AC power in your service vehicle means self sufficiency and convenience for you.

2. (Top of page) Demand start circuitry initiates generator operation immediately, even for variable speed power tools.

Continued from page 64



A. (Right) An example of how all the necessary parts for power generation are tied together.

3. (Below) Typical generator installation. Mounts anywhere in any orientation.



For the purposes of discussion, the principles that guide the selection and installation of a static inverter and a battery powered generator are similar, but we'll examine the generator in detail.

A typical installation of a vehicle electrical system powered generator uses both the vehicle's battery and an additional battery or batteries to operate, depending on the type of load it needs to support. (See illustration A). These components are installed in conjunction with a battery isolator, to ensure that all the batteries are being charged properly while the engine is running, and to assure that the starting battery for the vehicle never discharges to the point that the vehicle won't start.

Standard automotive batteries are designed to supply 300 — 500 amps of current over a relatively short period; therefore, they are not the best power source for inverter or generator operation. Deep cycle or marine batteries are designed to deliver lower current levels for a longer time and are capable of taking deeper discharges without battery damage.

Batteries are rated in cold cranking amps (CCA). In general, the higher the CCA, the longer the battery will operate a load on the power source, whether it is a generator or static inverter. Length of run time depends on the battery capacity, the size of the load (tool or device connected to the power source) and how frequently the load device is operated.

For a typical battery operated generator, the time a load can be operated by a given battery system can be calculated by the following formula:

For example, two batteries with a cold cranking amp rating of 675 are used to operate a generator. An AC load of 4 amps is required by the tool being operated.

Continuous run time is: ?

Run time is extended if the load is not running continuously. Most devices are operated intermittently, so estimates of operating time vary with the device and frequency of operation.

But how do you know what size inverter or generator to use? Chart 1, shows a list of common devices that may be

1. (Right) Add the wattages together to find a total load.

Common AC Load Devices			
Device	Typical Watts	500 Watt Supply	1600 Watt Supply
Air compressor	700		•
Belt sander	1000		•
Bench grinder (6")	500	•	•
Circular saw (5-1/4")	800		•
Circular saw (8-1/4")	1550		•
Drill (1/2")	700		•
Drill (3/8")	400	•	•
Hammer drill	400	•	•
Hand grinder (large)	700		•
Hand grinder (small)	350	•	•
Incandescent lamp	100	•	•
Jig saw	400	•	•
Key machines (except Ilco)	475	•	•
Key machines (Ilco)	680		•
Orbital sander (palm)	1200		•
Orbital sander (standard)	250	•	•
Quartz lighting (one 500W)	500	•	•
Quartz lighting (dual 500W)	500	•	•
Reciprocating saw (large)	1000		•
Reciprocating saw (small)	500	•	•
Refrigerator (3 cu. Ft.)	150	•	•
Router (1 HP)	800		•
Router (3 HP)	1600		•
Sander/grinder (4-1/2")	700		•
Sander/grinder (7")	1600		•
Soldering iron	50	•	•
Vacuum cleaner (commercial)	900		•
Vacuum cleaner (shop)	500	•	•

Continued from page 66



2. (Right)
How the
type of motor
affects the
selection of an
inverter or
generator.

		Starting Current Suitability							
		Shaded Pole		Permanent Split Capacitor		Split Phase		Capacitor Start	
AC Motor Horsepower	Rated Current (Amps) @115V ac	500 Watt	1600 Watt	500 Watt	1600 Watt	500 Watt	1600 Watt	500 Watt	1600 Watt
1/6	4.4	OK	Yes	No	Yes	No	Yes	No	Yes
1/4	5.8	No	Yes	No	Yes	No	Yes	No	OK
1/3	7.2	No	Yes	No	Yes	No	Yes	No	No
1/2	9.8	No	Yes	No	OK	No	OK	No	No
3/4	13.8	No	OK	No	No	No	No	No	No

Cable Length in Feet				
Generator	up to 3'	3' to 8'	8' to 10'	10' & over
500 Watt	#6 AWG	#4 AWG	#4 AWG	#4 AWG
1600 Watt Single Battery	#2 AWG	#2 AWG	#2 AWG	#0 AWG
1600 Watt Multiple Battery	#0 AWG	#0 AWG	#0 AWG	#00 AWG

3. (Left)
Using the correct
connecting cables is critical.

called upon in your daily service calls. For the most part, you would only use one device at a time, but if you use work lights for night work, or other combinations of tools at the same time, add the wattages together to find a total load.

Power tools and key machines generally use "Universal" electric motors, which have reasonably low starting currents by nature of their construction. Larger AC motors use more current during startup, anywhere from 1.5 to 5 times the rated current, depending on the construction of the motor. These larger motors might be found on a stand-up drill press, large grinders or other shop type tools. The motor's nameplate shows the rated current, horsepower rating and the type of motor. *Chart 2*, shows how the type of motor affects the selection of an inverter or generator.

You can plug the amperage figures from the tables back into the formula to get an idea of how long the devices you need to run will operate with any given battery system. If you find you need a longer run time than the formula delivers in order to complete a task before recharging (running the engine in your service vehicle), you may need to put additional batteries into the system.

Once you've selected the generator that fits the electrical needs of your service vehicle, the installation is straightforward. After reviewing your generator usage and selecting the battery size and number of batteries, determine the best location to mount your generator and its power supply. Keep the battery as close to the generator as possible to reduce the length of the power cables. Allow at least two inches of free air space around the generator. Do not obstruct the ventilation as it can cause the generator to overheat.

The generator is not position sensitive and may be mounted in whatever orientation best suits your application. (See *photograph 3*.) Place the unit in the desired position or use a mounting template and mark the location of the mounting holes. Remove the unit or template and drill suitable holes at the indicated locations. Fasten the generator using flat washers, lock washers, bolts and nuts through the holes in the base flange.

Install additional batteries, fuses, and, if required, a

battery isolator. Cable, connectors, fuses and isolators may be available from the distributor from whom the generator was purchased; many also provide complete installation services. Always be sure that the polarity (+ & -) is correctly connected to the generator.

The use of fuses or circuit breakers is recommended to protect both the vehicle electrical system and the generator. Place fuses no further than 18" from the battery.

The connection between the supply battery and the generator is critical for obtaining the best performance and long life from the generator. Choose the correct supply cable size. (See *chart 3*.) Note that the negative line from the generator must be connected directly to the supply battery, not to the vehicle chassis, using the proper size supply cable. Carefully plan the power supply cable route, so the cables aren't allowed to rub against sharp surfaces, which may damage insulation and cause a short.

The AC wiring in your service vehicle can be as simple as an extension cord or a power strip, or it can be as elaborate as a house wiring system. The generators typically support extension cord runs of up to 100 feet.

The Redi-Line family of generators from Pacific Scientific offers two models for twelve volt electrical systems, a 500 watt unit, and a 1600 watt unit. Both units use a demand start circuit that detects when your device is turned on and starts developing AC power — even for variable speed power tools. They operate very quietly and reliably, with minimal maintenance. For over thirty years these products have been producing dependable AC power for utility, trades and emergency services professionals, as well as marine and recreational users.

When you examine the options available for equipping your service vehicle, a cost effective, reliable, quiet, easy-to-install and easy-to-maintain source of AC power generation, the battery powered generator is a good choice.

For more information on Redi-Line generators, contact Pacific Scientific, 4301 Kishwaukee Street, P.O. Box 106, Rockford, IL, 61105-0106 Phone: 815-226-3100; Fax: 815-226-3080; E-Mail: customer_service@atg.pacsci.com; Web: www.rediline.com. Circle number 302 on Rapid Reply. **TL**

The Dynalock 1030-RXB

by Richard Allen Dickey



DynaLock has put together an access control package that is the most complete I have seen. (See *photograph 1.*) It is called the 1030-RXB High Security Locking System Kit. The kit consists of a:

- ★ Series 6450 exit sensor bar.
- ★ Series 3000 electromagnetic lock.
- ★ Series 7000 key switch.
- ★ Series 5300 plug in transformer.
- ★ All the wire and hardware needed to install the above components.

Each of the components are of a very high quality and I will cover them one at a time. Let's get down to some of the details.

The Series 6450 exit sensor bar is constructed of aluminum. (See *photograph 2.*) Not just some of it, the whole thing! The main body is a tube cut to one of three available lengths, 34", 40" and 46". The end plates and mounting brackets are also aluminum. Not cast aluminum, solid aluminum that has been milled to fit perfectly. (See *photograph 3.*) The main body houses two small circuit boards that are the heart of the sensor bar. (See *photograph 4.*)

Many devices of this type work in a variety of different ways. Some work through the use of mechanical switches. Others use capacitance or pressure sensitive devices to trigger a release. The 6450 uses two optical sensors.

I have learned over the years that anything mechanical can and often does fail from one cause or another. Electronic devices have no moving parts. They rarely fail from use. I know, these electronic gizmos use to fail when you touched them wrong, hooked them up wrong, looked at



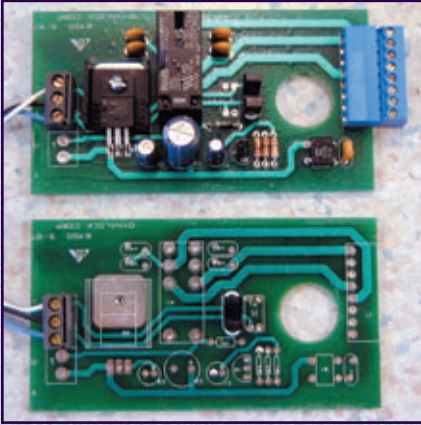
1. The 1030-RXB High Security Locking System Kit.



2. The series 6450 exit sensor bar.



3. All of the parts for the exit sensor bar are from solid aluminum that has been milled for a perfect fit.

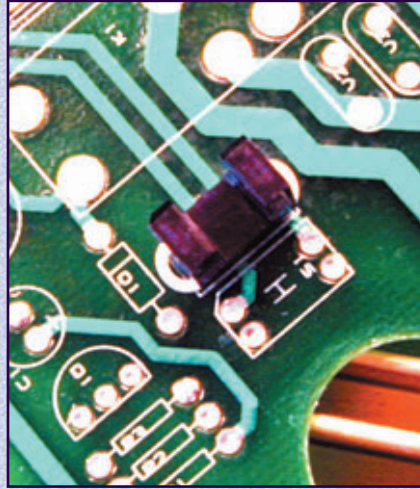


4. There are two circuit cards inside the 6450. They are located at each end of the sensor bar and both have an optical sensor.

them wrong or even said the wrong things in their presence. That is just not the case today.

Components have become much more reliable and the engineers that design these things often include nice features like built in spike suppression and the ability to connect several different power sources with no ill effects.

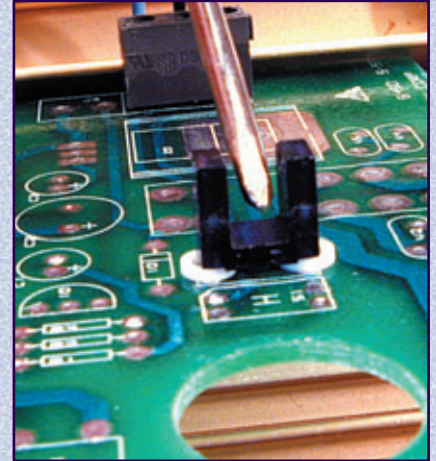
The 6450 can use 12 or 24 volts, AC or DC. This alone allows the exit sensor to be used in many different applications.



5. This is one of the optical sensors.

Let's get back to the optical sensors. There is one at each end of the exit sensor and I want to tell you a little bit about them.

An optic sensor works much like a mechanical switch without the mechanical down side. (See photograph 5.) There are no moving parts. The small sensor is designed into the circuit board. The sensor works by sending an invisible light from one side of the sensor to the other. The sensor is tripped by breaking the beam of light.



6. The invisible light beam is temporarily blocked by a screwdriver.

(See photograph 6.) A thin blade attached to the mounting bracket of the 6450 fits between the two parts of the optic sensor when the bar is pressed by someone or something. (See photograph 7.) This thin blade breaks the beam and you get the same results as you would with a mechanical switch. A bonus is that the optical sensor never requires adjustment.

The connections for power and the two single pole double throw (SPDT), 5 amp contacts are located on the main

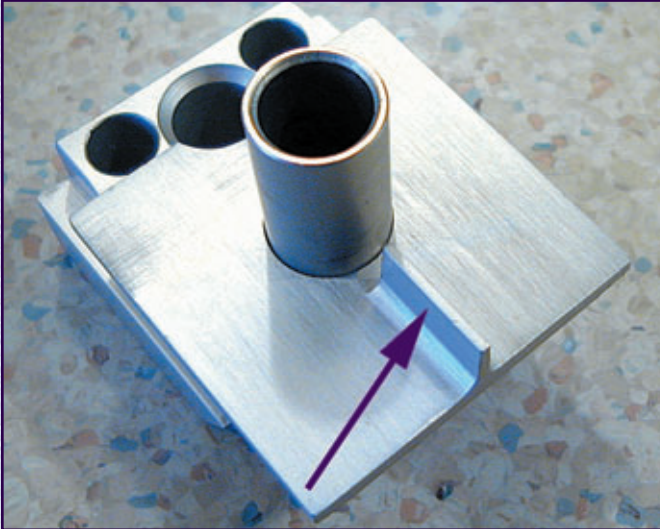


Key Manager

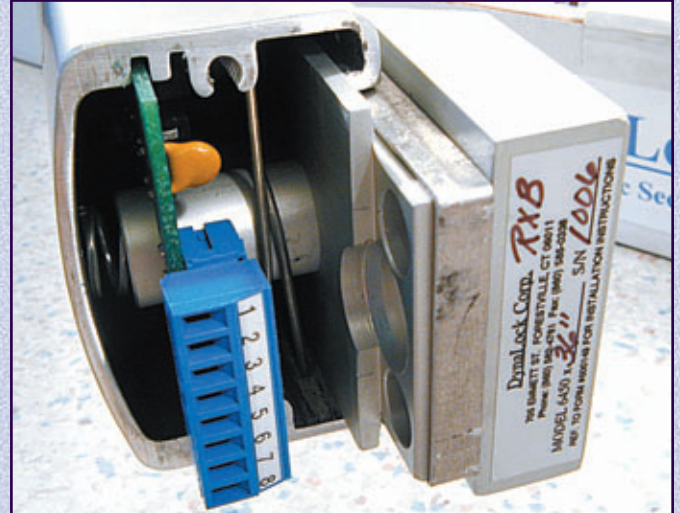
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7. The arrow points to a small blade on the mounting bracket. The blade does the same thing that the screwdriver did in the last photo.



8. A look at the circuit board while it is inside the sensor bar.

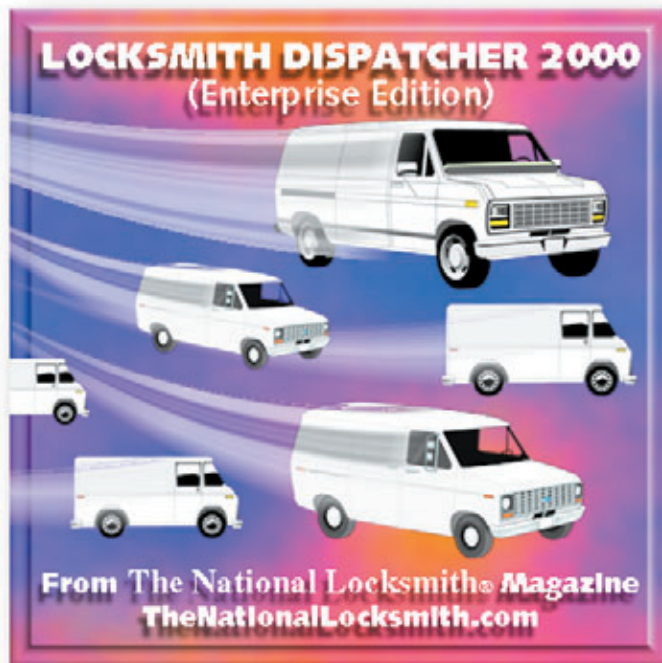
circuit board inside the exit sensor bar. (See photograph 8.) All wiring is passed through a 1/2" hole in the mounting bracket and into the door. (See photograph 9.) If you look closely you can see one of the security screws used to attach the end plate.

The mounting bracket can be attached to the door in several different ways. For aluminum doors you can use four #10 Tek Screws. For those not

familiar with a Tek screw, it is a self-drilling and self-tapping screw with either a hex head or a Phillips head. (See photograph 10.) Using a drill, these things go through aluminum like butter and do an excellent job. They also work with light steel. For those hollow metal doors, a blind nut in the 10-32 range is the best bet. (See photograph 11.) Sex bolts in the 10-24 range work great for wooden doors.

Power for the 6450 is on terminals 1 and 2 on the main circuit board. (See photograph 12.) Polarity does not matter. Terminals 4 and 7 are the common for the two onboard contacts mentioned earlier. Terminals 3 and 4 will give you a normally closed (NC) condition with power applied and the exit sensor bar not depressed. (See photograph 13.) By the way, these are the wiring

Continued on page 74



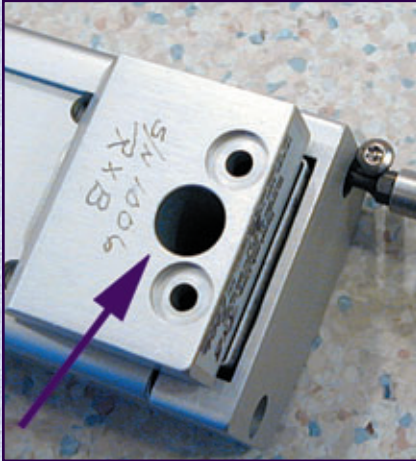
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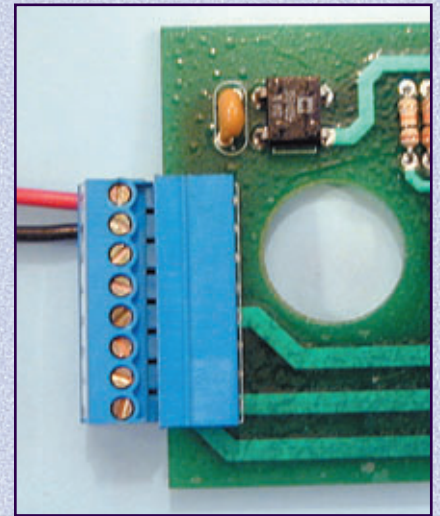
9. The arrow points to the hole used for wiring to enter the 6450. You can also see one of the security screws used to hold the end plate in place.



10. The Tek screw is one method to attach the mounting brackets.



11. Blind nuts are another method to attach the mounting brackets.



12. Power connected to the main board of the 6450

connections that are in the diagram I will show you later.

To get the wiring from the door to the door frame, there is an armored flexible steel cable that the wires can pass through. (See photograph 14.) This protects the wires and leaves a neat appearance. The door frame works as a good pathway for wiring as well as acting like a protective cover. Before we get into any more wiring details, let's take a look at the electromagnetic lock.

The series 3000 electromagnetic lock (maglock) has a holding force of 1500 pounds. (See photograph 15.) Like the exit sensor, the maglock can use 12 or 24 volts AC or DC. However you will have to set the jumpers inside of the maglock for either the 12 or 24-volt setting. (See photograph 16.)

The power is connected to terminals 1 and 2. If a jumper is placed between terminals 3 and 4 there will be an adjustable time delay from 1 to 80 seconds before the maglock will relock after it has been opened. (See photograph 17.) Otherwise the relock is immediate. The timer is set by turning the adjuster clockwise with a small screw driver to add more time and counter clockwise to reduce the time. Do not force the adjuster. It can be broken if you treat it like a lug nut on a car.

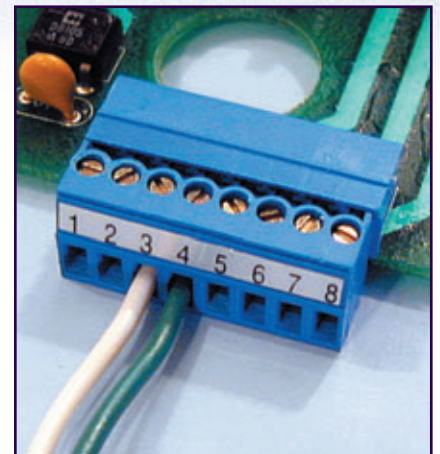
The circuit board can be disconnected from the magnet assembly by pulling a connector. (See photograph 18.) The real advantage here is that you are able to test the resistance of the in the magnet to see if they are working properly. coils (See photograph 19.) Each coil should have about 50 Ohms of resistance.

To install the 3000, first attach the

armature to the door. (See photograph 20.) The armature has a couple of anti spin pins and one sex bolt. (See photograph 21.) The sex bolt can be used with hollow metal doors as well as wooden doors.

The 3000 has a convenient mounting system called the "FasTrak" mounting system. (See photograph 22.) The magnet is shipped with the track installed. To remove the track, the two access covers on the maglock need to be removed. (See photograph 23.) On each end of the maglock, there is a setscrew. Loosen the two setscrews and the track will slide off. (See photograph 24.) This makes it nice because you are able to mount the track, which is very light, and then slide the heavy maglock into place.

There are five screws used to secure the FasTrak bracket to the door frame. Two of the five screw holes are elongated. (See photograph 25.) The idea is to use the two elongated holes to snug the bracket to the door frame. Next, slide the maglock into place and close the door. Because the armature is already installed on the door, you will be able to see if the magnet and armature make perfect contact. If they don't, now is the time to tap the magnet around with a small mallet to get a perfect alignment. The elongated holes in the



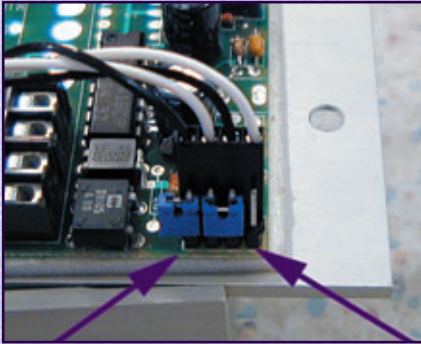
13. Wires connected to the normally closed contact of the main board.



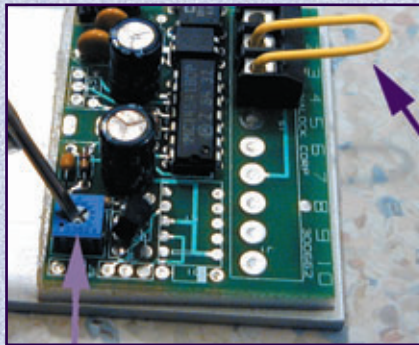
14. Armored wire protection used to protect wires going from the door to the door frame.



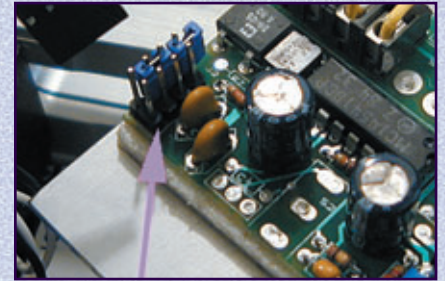
15. The series 3000 electromagnetic lock.



16. Jumpers used to select proper voltage.



17. Adjusting the time delay for re-locking is easy.

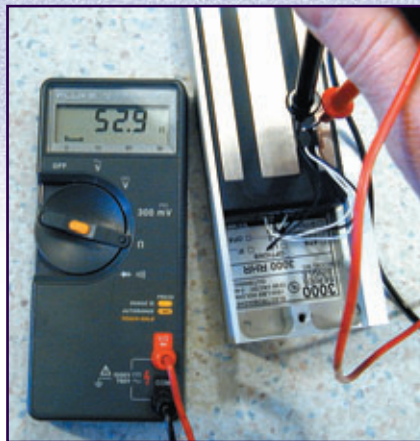


18. The circuit board can be easily removed to allow testing of the magnet coils.

track are just for this purpose.

When things look aligned, remove the magnet and install the other three screws in the track. Don't forget to tighten the two screws in the elongated slots. Replace the magnet on the track and tightening the setscrews. This secures the maglock to the track.

The wiring for the maglock passes through the top and into the door frame through a 9/16" hole that you drill. (See *photograph 26.*) If you are lucky, you will be able to fish the wiring through the door frame and to the exit sensor bar. The only thing left to do is install a key switch to allow access from outside and



19. There are two coils and each one should be about 50 Ohms.

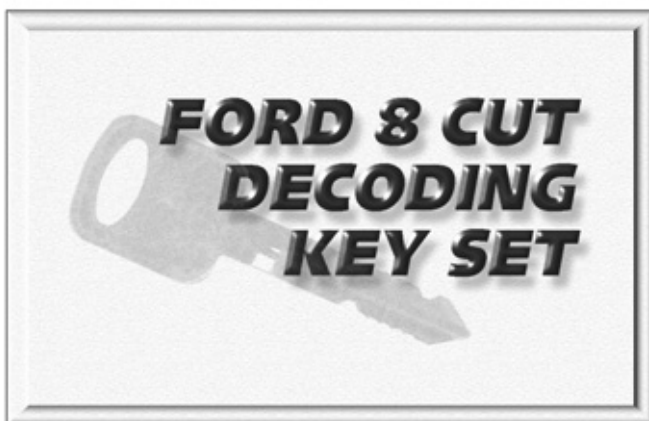


20. The armature that attaches to the door.



21. Pins in the back of the armature to prevent spinning.

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#FD - 8



22. The FasTrak mounting system used to attach the magnet to the door frame.

plug in the power. Lets look at the key switch first.

The series 7000 key switch accepts your mortise cylinder. (See photograph 27.) The cylinder must be either 1-1/8" or 1-1/4" with a cloverleaf cam. (See photograph 28.) The switches are available in many different configurations including single pole double throw (SPDT), double pole double throw (DPDT), momentary, maintained, time delay etc... Some of the available options include an anti-tamper switch, audible indication, water proof cover etc. Photograph 29, shows the key rotated and the switch depressed.

The series 5300 plug in power supply is the last part of the kit. (See photograph 30.) This kit included the 5324, which is the 24-volt model. It has a 1.5 Amp output. The low voltage output is fused and non-replaceable.

The 5324 is more than sufficient for this project. The required power for the 3000 series maglock and the 6450 exit sensor is less than a third of an Amp. It is great when a company provides a power supply that isn't working at its rated capacity as soon as you plug it in. This power supply would easily run four times the equipment that we have now.

Aside from the major components of the 1030-RXB High Security Locking System Kit, there is a list of miscellaneous items that are included. There is 100 feet of wire in four colors, a TT15 security bit, mini screwdriver, nuts, bolts, screws, and on and on.

Photograph 31, shows a general wiring diagram using all of the components supplied in the kit. As you can see, there are two things that are powered by the power supply. They are the maglock and the exit sensor. Remember, the key switch does not use power, it simply acts like a light switch.

Most of you will have no problem with the wiring diagram. But I am sure there are a few that would appreciate a little more information, so here goes.

It is easy to understand the red and black wires that go from the power



23. There is a cover plate at each end that allows access to the FasTrak retainer screws.



24. Loosen the setscrews and the FasTrak bracket slides off.



25. The FasTrak mounting bracket has two elongated holes used to align the magnet with the armature.

supply to the 6450 exit sensor and connect to terminals 1 and 2. They simply power the exit sensors main circuit board. The long series connection through the rest of the system is another matter.

The connection goes from the power supply, through the maglock, through the key switch and to terminal 4 on the exit sensor main board. For the maglock to work, the power still has to get back to the power supply where it started. Instead of running an extra wire from terminal 3 on the exit sensors main board back to the power supply, they simply put a jumper wire between terminals 2 and 3. The jumper allows the use of the power wire that is used to power the main board in the exit sensor.

Using the jumper or running an extra wire are both acceptable. However, if you choose to use the jumper and the maglock does not work, you will need to do one of three things. Reverse the power wires to the 6450 at the power supply, reverse the power wires on terminals 1 and 2 inside the 6450 or move the jumper wire from terminal 2 to terminal 1. Either of these solutions will correct the problem as long as the



26. Wiring passes through the door frame and into the 3000 through a large hole in the top.



27. The series 7000 key switch.

Continued on page 81

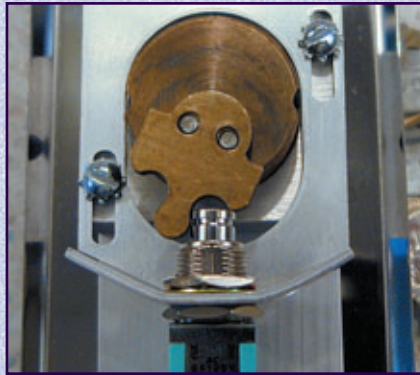
Continued from page 76



28. The mortise cylinder must have a clover leaf cam to work properly.

directions were followed everywhere else.

Because this system is based on an electromagnetic lock, I should mention one more thing. If there is a power failure, a maglock will release. Your customer may already have a battery backup system that you can tap into. If not, you will need a small battery backup system. These are available from many vendors including DynaLock.

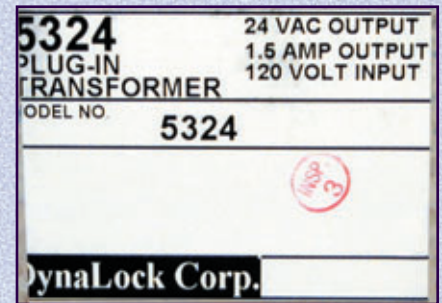


29. In this position the switch is depressed.

When DynaLock put this package together, they had the installer as well as the end customer in mind. The packaging is neat, and the kit is complete. Everything is of very high quality. Good job DynaLock!

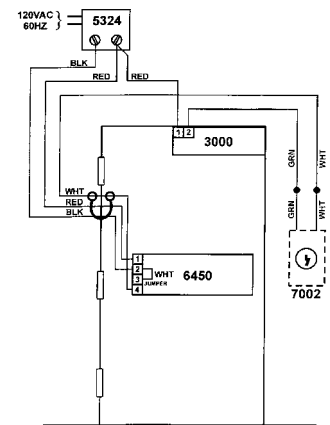
For Additional Information Contact, DynaLock Customer Service at 860-582-4761 or Fax them at 860-585-0338. DynaLock is located at 705 Emmett St. P.O. Box 9470 Forestville, CT 06011. You can E-mail them at DynaLock.corp@snet.com. They also have a nice web site at www.DynaLock.com. Circle number 333 on Ripid Reply.

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30. The series 5324 power supply provides 1.5 Amps at 24 volts AC.

WIRING DIAGRAM - 1030-RXB SYSTEM KIT



31. A basic wiring diagram for the 1030-RXB High Security Locking System Kit.



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BEGINNER'S CORNER

Servicing Aluminum Doors.

by
**Raymond
Moreno**

I'm convinced that a very basic skill that we should all be familiar with is servicing aluminum stile doors. When I first started out in this fantabulous trade, my mentor would tell me to stay away from commercial door servicing. He said that there were too many possibilities for something to go wrong and that the liability could be high. But now I say, "Ba-humbugg!" I was robbed of having this valuable knowledge early in my career.

As locksmiths, the servicing and maintenance of aluminum stile doors should be right up our alley. This is definitely a locksmith specific job that is able to put a few bucks in our pockets. Once you gain a basic understanding of how these doors are installed, you'll be saying, "Mannn... I wish I had learned that earlier!"

First off, let me say that not all aluminum stile doors are removed and serviced the same way. The removal steps will be determined by the hardware that is on the doors. As an example, the door in this article was installed using a concealed overhead closer. This could be determined by the small metal plate (the side load arm cover plate), on the upper corner that is on the inside of the door nearest the hinge. That, and the fact that there was definitely a door closer installed somewhere and no evidence of a surface or floor closer was present. So I will be removing (and adjusting) this door, with the knowledge that it is installed with an overhead closer.

Let me go on a "goat-trail" for a moment, and let you in on one of my little "trade secrets." If I'm out "cruising around" and see a construction site, I always pull over to introduce myself and pass out business cards. Business cards (and personal relations), are my bread winners. As a matter of fact, that's how I landed this job.

As I was talking to the construction worker, he was showing me how they were just about finished laying-out the new tiles in the dining room floor of this Ethiopian restaurant. Mr. Murphy had followed them and not me for once, and the door would not fully open with the new tile in place. Now my story begins...



1. Here we see our aluminum patient.



2. The bottom hinge side of the door with the manufacturer label, Vistawall.

In *photograph 1*, you can see an exterior view of the door. Notice that it has two lock cylinders. That's a possible rekey job in the future. Gotta think ahead.

Photograph 2, is an interior view of the door and you can see that it is manufactured by Vistawall. There are many different manufacturers of aluminum stile doors such as: Jackson, Vistawall, Herculite, to name a few. When ordering a new aluminum stile door, you can specify to the manufacturer what type of hardware will be used with it, (Rixson floor closers, Norton overhead closers, butt hinges, etc.) and they will ship it set-up for the necessary hardware.

In *photograph 3*, I have outlined where the bottom of the door is catching on the new tile floor. There is a 6" to 8" section that will have to be filed-down. "Filed down," you say! Yepper-ee... filed down. Let me explain my madness. With this specific style of door closer present, there are a few ways of adjusting the door. My options are:

1. On the top hinge side edge of the door is an arm adjustment screw. I can place a flat-tipped screwdriver through a hole in the door edge (that is positioned over the screw), and adjust the upper part of the door to move "away", or "closer" to the door jamb. This will either "lift" or "drop" the bottom edge of the door (opposite the hinge side). More on this later.

2. On the bottom hinge side edge of the door is another hole. It is positioned over the pivot arm adjustment screw. This screw can also be accessed with a flat tipped screwdriver and will enable you to "raise" or "lower" the door nearest the hinge side. More on this later.

Before I started to remove anything, I tried to adjust the door with the above mentioned techniques, which was unsuccessful. The door

could not be raised any higher. It was already adjusted as high as it would go. Any higher, and I would not be able to mount the top spindle into the slot of the side load arm. Plus the top edge of the door could not be adjusted closer to the door jamb which would have caused the bottom edge of the door (opposite the hinge side) to rise. It was as close to the frame as it would get. So my only other recourse, besides getting a lower threshold, (or buying myself a Carnitas burrito), was to file down the bottom edge of the door.

In *photograph 4*, you can see the small cover plate, which is a very common sight on aluminum stile doors using concealed overhead



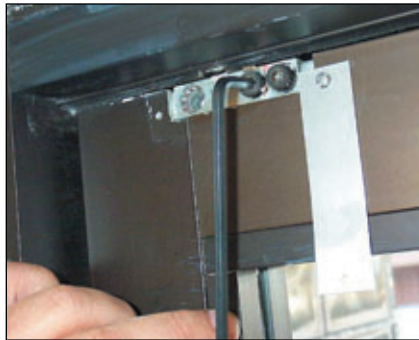
3. A section of the door that is catching on the newly installed tile.



4. The cover plate that is commonly passed, never knowing what it's for.



5. A flat-tipped screwdriver to removes the cover plate.



6. Removing the screws that fasten the "clamp bar" to the "side load" arm.



7. The "clamp bar" being removed exposing the "side load arm", and the "spindle."



8. The door being pushed outward removing it from the spindle.

closers. These plates come in a variety of different finishes to match the doors. (Hmmm... so that's what those little metal thingies were.)

Now, let's see the first step in removing the door. In *photograph 5*, we see one of the small, flat-tipped screws has been removed to reveal the "clamp bar," and "cap screws." The clamp bar is the aluminum colored block with the three screws going through it. And the cap screws are the three hex-tipped screws.

Photograph 6, shows me unscrewing the cap screws with an Allen-wrench. Also notice that you do not have to remove the second screw

from the cover plate. Just let it hang out of the way, and you'll be all right.

Now we're getting down to the nitty-gritty. In *photograph 7*, we can see the clamp bar being removed. This is what actually holds the door in place. Without it, the door would tilt and fall outward onto the ground. Take a look at the silver colored metal block behind it. That is the "side load arm." The side load arm is mounted into the door, itself. Notice that there is a space between two of the three screws of the side load arm. The dark metal between those screws is the overhead closer spindle.

The next step is to push the door in an outward direction. (*See photograph 8.*) The spindle from the overhead closer will disengage from the side load arm. A few words of caution must be mentioned here.

1. Make sure you have someone on the outside helping you with the removal. If you were to push the door outward to disengage it and it fell forward and shattered the glass or worse, totally destroyed the door, you would pretty much lose any profit you might have gained. (And a customer as well).

2. These types of aluminum stile doors are not too heavy, approximately 100 lbs. But if you're servicing a solid frameless glass door, you better be sure to have another body there with you. If a 300 lb. glass door were to fall on you it would definitely uncomb your hair.

Once you lean the door outward and the spindle is disengaged from the side load arm, just lift the door straight up about 1" inch off the bottom pivot and it will come right out. Most aluminum stile doors with concealed overhead closers will have floor-mounted bottom pivots that are nothing more than a single large spindle that fits into a detent in the bottom pivot arm. See *photograph 9*, for a variety of bottom pivots that are commonly used with overhead concealed door closers.

Once the door has been removed, depending on the door material, make sure that you have something to rest the door on so that it does not get scratched-up, cracked, or damaged, while you're working on it.

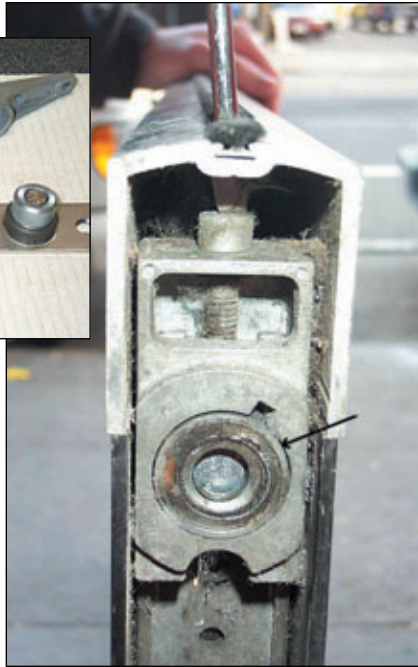
Photograph 10, is a shot of the bottom side of the door. Specifically,



9. A variety of bottom pivots.

at the “bottom pivot arm” that I mentioned earlier, which lifts the door when adjusted. The arrow is pointing to the pivot cup, or pivot receptacle. The floor-mounted bottom pivot has a spindle that would set into this detent when the door is properly positioned. (See far left pivot in photograph 9.) Now you see why the door can be removed by just lifting it off the spindle.

In *photograph 10*, a screwdriver is inserted into the hole on the edge of the door and the adjustment screw turned, so that the pivot receptacle is flush with the bottom of the arm. The door would be adjusted at its lowest position like this.



10. A close-up of the bottom pivot arm with the “pivot cup” at its lowest point.

Photograph 11, is the same bottom pivot arm, but with the adjustment screw turned in the opposite direction. The pivot receptacle is now extended, as shown by the arrow. In this position, the door would be raised to



11. The same “pivot cup” is now protruding outward.

its highest position.

In *photograph 12*, you can see a close-up of the “side load arm” which is mounted internally in the top part of the door. In this photograph with screwdriver in hand I am turning the

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12. A close-up of the "side load" arm, which is also internally mounted.



13. The most important part of all, filing the door down.

adjustment screw. By turning this screw, it will make the side load arm move towards the door jamb, or away from the door jamb. Since it is fastened to the top of the door, it would make the top of the door, (on the hinge side), do the same.

As a side note, sometimes these adjustments must be made with the door removed. The reason being, the

screws will sometimes freeze-up from non-use. If you are trying to make adjustments with the door still mounted, you wouldn't know if the screws were frozen from non-use, or if they were at their max position. In which case, you would cause damage to the parts.

Lastly, in *photograph 13*, you can see me filing down the door to the needed height. For this type of job, I use my handy-dandy, 12" coarse, flat bastard file. (And "no," I'm not cussing... that's what it's called). Remember, whenever you are filing down aluminum, (or any metal), make sure to wear gloves. (Don't you just hate the feeling of metal slivers under your nails?)

When the door was finished, it had a little under 1/8" clearance and the construction crew was happy, and I was off to my favorite Thai restaurant.

From the time I started, to the time I finished, (including the paperwork) it took me a total of 1-hour. So as you can see it's not that difficult, nor time consuming. And the profits for this type of work are great!

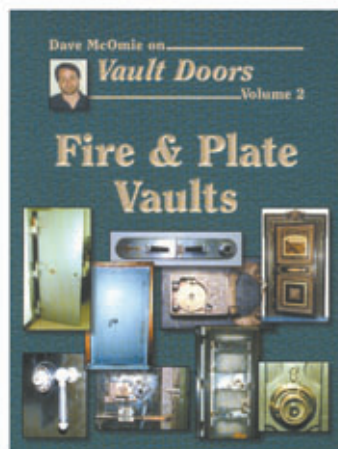
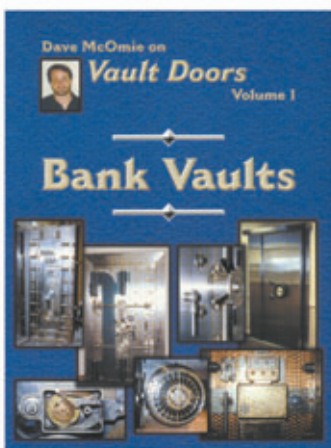
Whenever you're called upon to service an aluminum stile door, (or better yet, a frameless glass door) and the door must be removed for whatever reason, charge accordingly. Personally speaking, my hourly rates go "out the window" with this type of work. I feel the customer is paying for my "expertise" in this instance.

Well, the next time you see that little metal plate on the upper corner of an aluminum stile door, try not to grin so much. I know you'll feel great when you think to yourself, "I know how to service that door." And remember, in this trade, knowledge is everything!

Till next time.

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The UGHTER Side

Doin' All Right



by
**Sara
Probasco**

"You gotta help me," the woman's voice said tersely over the phone. "It's my sister. I was supposed to pick her up this morning and take her to San Antonio, shopping." Ellie Monroe paused.

Don waited a moment, then asked, "What is it you want me to do?"

"I need you to let me into her house."

"Have you lost the key, or what?"

"No, no. I've never had a key. June didn't want anybody having one, but her. Oh, I just knew something like this would happen. I tried to tell her, but she wouldn't listen."

"Well, Mrs. Monroe, that puts me in an awkward position. I don't see how I can let you into a house that doesn't belong to you, especially when you've just admitted the owner doesn't want you to have access to her house."

"But my sister..."

"You have to understand my position, here."

"But I must get into the house. I'm afraid something dreadful has happened to my sister. You see, she doesn't answer her phone or the door."

"Maybe she wants to be left alone. Have the two of you had a tiff or anything?"

"No. It's nothing like that. She was supposed to pick me up at eight, this morning, and here it is nearly nine. She's never late. I just know something is terribly wrong." The woman's voice had begun to tremble.

Don agreed to meet Mrs. Monroe at her sister's house in fifteen minutes. Then he called the police.

"I'm not sure what we'll find," he admitted to the dispatcher. "Miss Carter lives alone in her townhouse, and her sister hasn't heard from her since day before yesterday."

Don met the wailing, flashing police car a couple of blocks from the house, going the wrong direction. The patrolman recognized the locksmith service van and quickly U-turned, falling in behind Don as he wheeled into Miss Carper's driveway. Mrs. Monroe was already there, peering into first one window and then another.

The front door of the townhouse sported a Schlage entry lock and deadbolt. Don frowned. Not the easiest to breach, in a hurry. He walked around back, looking for easier pickings, and found a Weiser knob-lock put in upside down. Grumbling to himself about inept carpenters, he quickly had the lock open, despite the aggravation of having the curious policeman breathing over his shoulder every step of the way.

By now, three patrol cars, an EMS ambulance and a clutch of curious neighbors had all converged on the scene. The eager patrolman stepped back as Don turned the unlocked knob and gently pushed the door open. It went a few inches and stopped. "What the...?" Don pushed harder. The door would go no farther.

"Here, let me," the patrolman offered. Putting his shoulder to the door, he shoved against it, hard. No luck. "Seems there's something wedged in behind the door," he said.

All Don could think was that Miss Carter had fallen and lain there at her back door for days. "You're a lot thinner than I am. Can you slip through the opening?" he asked the policeman.

"I think so," was the reply. Sure enough, he managed to wriggle through and promptly announced the barricade was nothing more than a large sack of lawn fertilizer that had somehow fallen over and become wedged against the back door. "But there's another problem," he said. Shoving the sack aside, he swung open the door to display another locked door facing them.

Don picked open the Kwikset deadbolt in a jiffy and opened that door. To his dismay, he had merely managed to get them into the locked garage. The two doors they had already passed through were merely an outside storage room. Facing him remained the back door to the house itself, and it was secured with a Schlage knoblock like the one he'd passed up on the front door.

Once he'd picked open that lock, he eased open the door and called, "Miss Carter? Are you in there?" There was no answer.

"We'll take it from here," the policeman announced with authority.

Don was all too happy to give him that privilege. He packed up his tools and located drivers of the various emergency vehicles that had him blocked in Miss Carter's driveway. Then he eased his service van through the curious on-lookers and made his way back to the store.

During the course of his busy morning, thoughts of Miss Carter flitted through his mind from time to time. Then the women's brother, John, came into the store to have some keys made. Not sure of the fate of the woman in question, Don was a bit hesitant to broach the subject, but his curiosity got the better of him.

"Is your sister all right, John?" he finally asked the man.

"Which one? Ellie hasn't been all right in years," John said, a twinkle lighting his eyes. "But we've learned to live with that. June's the only sensible one in the family," he admitted. "But even she is beginning to get a bit forgetful."

"Ellie called me this morning to let her into June's house. She said June didn't answer her phone or the door, something about their having made plans to go shopping together."

"I heard about that. In fact, I just came from the house. Quite a commotion over there," he chuckled. "The thing is, when they finally got inside and stomped around looking for June, nobody was home. Knowing her, there's no telling where she is."

"Then you're not worried?" Don asked.

"About June? Naw. She'd seventy-six. I figure she's plenty old enough to look after herself."

A few minutes after John left, who should come into the store but June, herself.

"I sure am glad to see you, hale and hearty," Don admitted to her with a smile. "You gave us all a scare, this morning."

June stared at him blankly. "What do you mean?" she asked.

"Early this morning, when Ellie called me to let her into your house. Everybody was a bit concerned that you were ill or had met with foul play. The police and EMS caused quite a stir in your neighborhood, I'm afraid."

"I don't know what you're talking about," she said.

"Ellie was concerned. She said you were supposed to take her shopping, or some such."

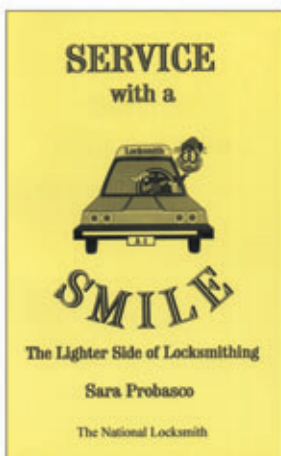
A look of sudden horror washed over June's face. "My word," she said, "was that today? I completely forgot. I went walking early this morning, and I stopped in at a friend's for coffee, and stayed the rest of the morning. I guess I'd better call Ellie and apologize. Could I use your phone?"

"Sure," Don replied.

"On second thought, maybe I should wait until I get home. Knowing Ellie, she probably called in the Texas Rangers, by now. I may want to spruce up a bit, in case that good-looking Walker TV fellow is called in on the case." With a smile, June gave her silver hair a little pat and sashayed out the door.

Like her brother, we haven't worried about June Carter since. **TRL**

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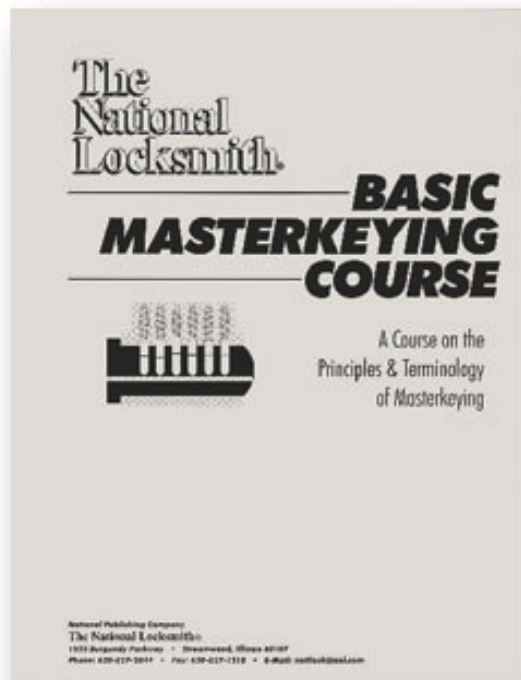


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#MK - 1



SEATTLE STAR UNBOUND

Occasionally I have a new thought and will change the way I have done things for many years. It seems so obvious to me now that I wonder why I have not changed sooner. I figured out a concept that makes it easier for the customer to understand modern safe combinations. I added a word to my safe combination card that makes it crystal clear on how to open a lock with the new combination.

I added the word "Dial" and changed the word "Stop" by adding a letter 's' to Stops! The combination card now reads:

Turn 4 times Left to number "X"
Turn 3 times Right to number "Y"
Turn 2 times Left to number "Z"
Turn 1 time Right till dial Stops.

This makes more sense that just Right to Stop. We, as safe technicians know what "Stop" means, but the customer cannot quite get it through their heads. With the addition of the word "Dial", it becomes a little clearer, I hope.

Another anomaly I point out is that nowhere on the card does it say you

must start at the number Zero, and nowhere does it say "go past." Once their education is completed, they can dial a safe open with the combination with the best of them, as long as they have the combo card in front of them. This is basic stuff, but important, and sometimes we take too much for granted. We must treat the customer gently and treat them as if they have a childlike mentality. (Am I elitist, or what?) That was a rhetorical question! Ha, ha.

OK, on to the meat of the article.

I recently went to Seattle to help Don Spenard teach a basic/advanced class in safe servicing and penetration techniques. It was a huge success, especially when Dave McOmie (Mack, to some, The Kid to me) made a special guest appearance. We started with eight students, but at the end of class, there were over 20 people in the room. The convention was the Tri-Con in Seattle. It moves to one of three different cities yearly. Everyone had a good time.

One of the facts about conventions is that more can be learned outside of

by Dale
W Libby,
CMS



the classroom than inside. This comes from 'networking' with new and old friends, and sharing some war stories. A lot can be learned by careful listening. I met old friends and met others who are now new friends. I also got some new tools and ideas to make of my own. I will now share some of them with you.

The first tool I had to have was the Assault Bosch (AB) drilling rig. I can be seen holding it in *photograph 1*. It might be hard to see, but it is basically a rifle stock connected to a Bosch Hornet drill. The rifle stock takes the place of the standard lever and chain that the Lee and the early Equalizer drill rigs take. If you look closely, you can see the stock braced against my forearm in the photograph. This was only one of six

Continued from page 90



1. The author with Assault Bosch drilling an Amsec safe.



2. Standard Lee/Equalizer drill rig above, with the Assault Bosch rig below.

safes that we used in the class at the convention.

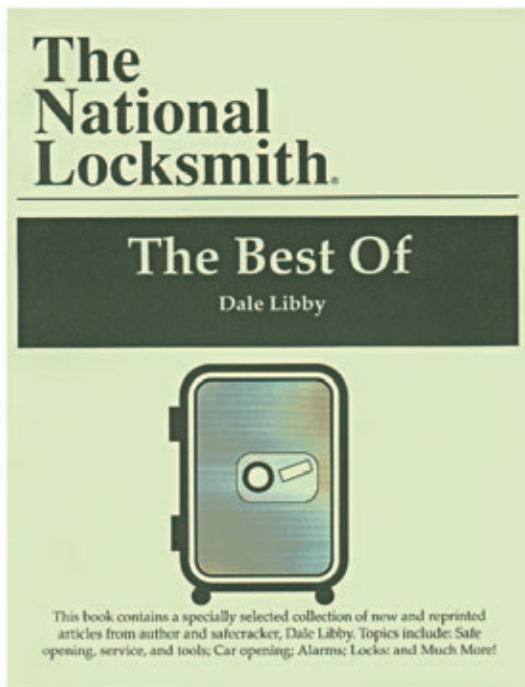
For a better view of the Assault Bosch see *photograph 2*. It is nothing more than a rifle stock fitted with a special quick disconnect fitting. The fitting was difficult to find. It is not an air fitting at all. It is a hydraulic hose fitting used in industry for machines and lift trucks. I took my Hornet to the store, and asked for a fitting that would work on it. The guy that found the fitting would not guarantee that it would leak or not. I pointed out that it would be for connecting and disconnection only. There would be no 'flow' through the fitting so leaks were unimportant.

What is the purpose of the AB rig? Simply, it makes floor safe drilling a breeze. Sometimes I drill a safe without templates, or mini-

rigs, or lever rigs. This brings me back to the old days before such high-tech tools were available. The LEE rig is a nice rig, but without the lever and chain attached, the drill is too hard to handle, hold, or apply pressure. Now, with the AB rifle stock, it is fun and easy to drill, and it gives the customer something to smile at.

With my 325 pounds leaning on the drill and AB rifle stock at high RPM, it makes the hardplate swirl out of the hole. There is no rig to attach to the safe and no chain to attach to the handle. Thus, there is no handle repair, and in fact, the dial ring does not even have to be removed to drill open the safe. Included are some pictures of a Star safe opening supplied to me by "The Kid." I will take you quickly though it.

Photograph 3, shows a typical Star or AMSEC lift out safe door. The dial is removable by lifting straight up. Under the dial there are two locating pins, which fit into two corresponding holes on the dial spindle. *Photograph 4*, shows the



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#DALE

holes on the spindle and the general all-purpose opening hole used for all non-hinged star floor safe heads. The hole is precisely drilled at number 41, about 7/8" out from the center hole on the spindle.

Here is a quick opening walk through.

Turn the dial to "0", and mark 41 with a magic marker on the dial ring. Use a small ruler and mark 7/8" from the spindle canter out at number 41. This is the drill penetration spot that will bring you exactly to the drop-in point of the lock. It makes no difference whether the safe uses S&G

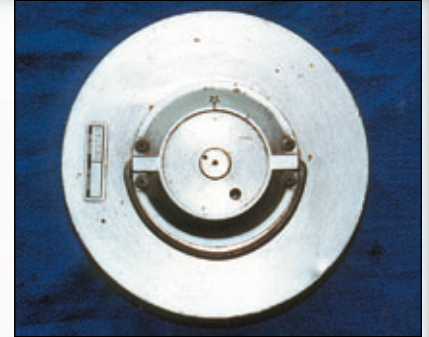


3. A standard Star (AMSEC) lift out door with removable dial.

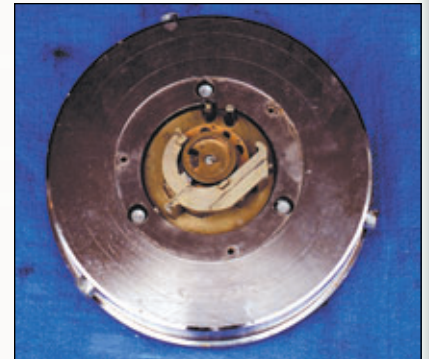
or LaGard wheels, the drop-in point is exactly the same.

Here is the progression.

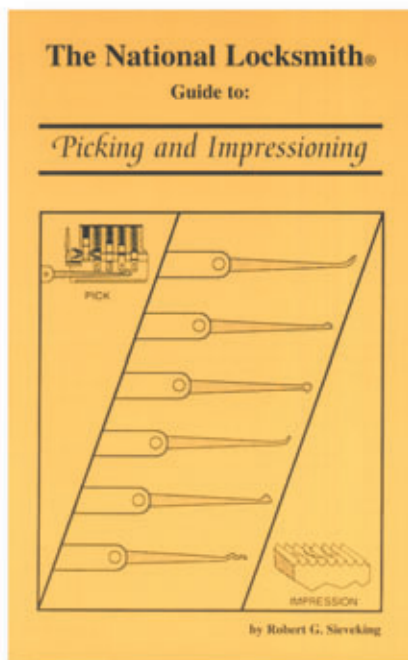
Center punch the point you want



4. Many effects can be accomplished by drilling at this drop-in position.



5. View of door with cover removed showing the three relock pins.



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to drill and start with a high-speed steel drill bit. Drill and vacuum, drill and vacuum. Eventually you will come to the hardplate. Change to a Carbide 1/4-inch drill bit (I use StrongArm), and attach your hardplate rig or your new Assault Bosch (Milwaukee, Makita, Porter Cable, or other drill motor) and lean into the hardplate. It's respectable, but no match for a high-speed drill motor and a carbide drill bit. Vacuum again.

Now you are down to the soft underbelly of the lock. There is a soft casting between you and the wheel pack and the lever of the lock. Drill slowly and easily through the soft casting until you hit the last wheel of the lock. Again, vacuum to remove all debris. This makes viewing the lock and wheel easier, and removes small Swaf that can cause endless time spent trying to overcome a debris lockout.

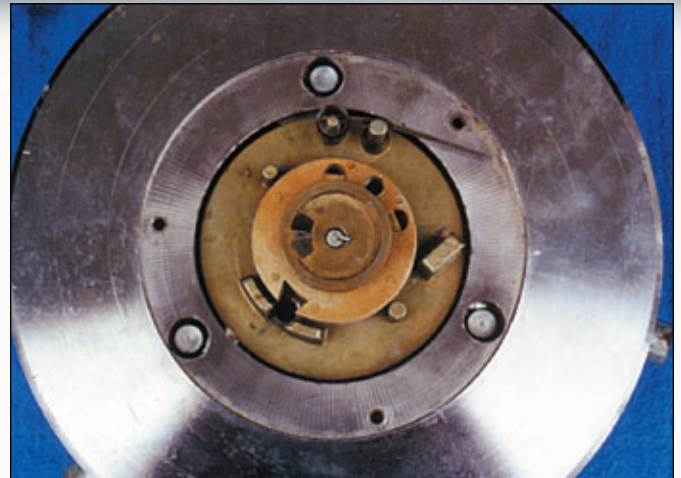
Sometimes, if you do not drill the hardplate at a true 90° angle, it will rotate. It is nothing more than a large hardened washer that is staked to the center post. If you find that the hole you started has disappeared, just probe the loose washer plate back and continue drilling.

Photograph 5, shows what the mechanism looks like when the large back cover is removed from the lock. It also shows the position

for the three relocking pins that the cover holds up when secured to the back of the safe door by three screws. The relock pins are at 12:00, 4:00, and 8:00 o'clock respectively. The locking bolts can also be seen just above the relock pins in the picture.

Photograph 6, shows the drilled hole at precisely the drop-in position. At this point, the wheels can be turned to this point by using a cut down Star Dial or by using a small pair of needle nose pliers in the holes in the spindle. After dialing the gates to this position, press down on the spindle and turn to the right and the lever should spring into the wheel gates. If the wheels cannot be turned by the spindle, then they can be probed into the correct position.

If the lock is severely damaged and the wheels cannot be turned, then a new gate can be drilled into the wheels and the fence forced (or drilled) into position. Then the entire base plate can be probed and



6. With the fence removed, the hole under the gates can be seen.


tapped clockwise to withdraw the three locking bolts.

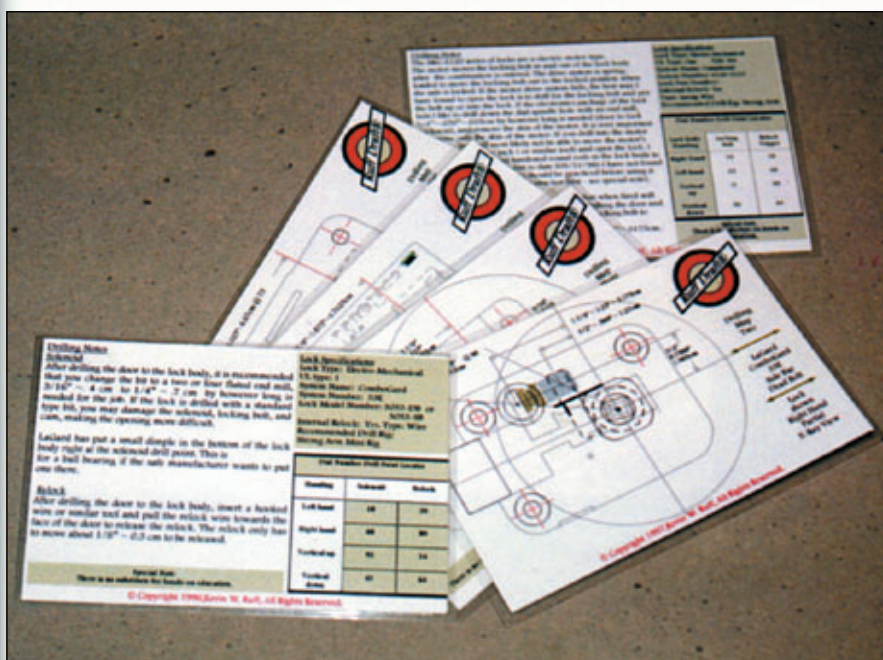
The point is that the AB drill rig makes short work of this opening and you do not have to attach a template or use the safe door handle for leverage. Sometimes older is just as good as newer.

At the Seattle convention I met another character names Kevin Ruff. He is part of the North West Safe and Vault Services, Inc, out of Seattle and Lewiston Idaho. His truck has the logo "Safecracker for Hire" on it. Quite catchy. His company also handles the NWSV Safe Transport trailer and system. I will talk about this another time. What interested me was his collection of Ruff Drafts, which are laminated templates of Electronic Safe Locks.

Not only do these templates show you the insides of LaGard, Amsec, and S&G electronic locks, the flip sides of these sheets have a lot of important information about the handing of the locks, relocker positions, how to defeat them and how to tell Old 33E locks (Combo Gard) from the newer version. The place to drill each lock is in a different location. Six of these cards can be seen in *photograph 7*.

I do not know the price of these fine cards, but they are excellent. For information you could write to: Kevin Ruff, Northwest Safe and Vault Services, Inc, P.O. Box 382, Lewiston, ID 83501.

Whew, finally over. With lots of new toys, I plan to open, use new tools, have fun, and prosper! 



7. Ruff Draft templates and technical information.

When I was a kid, the car dealers in my hometown would make a big deal out of the new model year every September. Like clockwork, they would start an advertising blitz to get as many people as possible into their showrooms to see the new models. Some dealers would hold elaborate unveiling ceremonies and invite their best customers. I remember going to one such ceremony with my father to see the brand new car from Ford that every one was talking about - the Edsel. It was a memorable event, but what I remember the most was the scale-model Edsel that they gave us. If I had that model today, I could probably sell it for a small fortune. But that was then, and this is now.

Today there is no clear cutoff point for the new model year. The new models now come out all year long. Through the years, the auto manufacturers have gradually lost all concept of when the year begins and ends, and even of what year it is. The first new car that I bought for myself was a 1990 Plymouth Laser that I purchased in February of 1989!

To the casual observer, it would appear that there is no longer a particular date that marks the end of one model year and the beginning of

present location inside of Detroit's Cobo Hall. Each year this facility becomes the largest single-floor showroom in the world, with 600,000 square feet of display space plus an additional 200,000 square feet on two other levels. More than 40 manufacturers gather every year to display over 700 cars and trucks to the public for a single week.

The amount of work that goes into this show is staggering. Construction crews begin assembling the displays in October, eventually working around the clock to have the show ready to open for the public on schedule. The last week of preparation before the show opens to the public becomes a frenzy of activity. Industry executives, engineers, designers and the press all converge for a week of press conferences, new model introductions and industry awards prior to the public opening.

I have been privileged to attend these events each year since 1995. For me, it's a week of hard work, late nights and sore feet. In addition, there is often more snow than a guy from Florida really wants to deal with. This year was no exception; the new models were stunning, and the events were fantastic.



1. The 2002 Ford Thunderbird will have a removable hardtop complete with the "porthole window".

another. But if you ask any executive of any major vehicle manufacturer anywhere in the world when the new model year begins, you'll probably get the same answer - the second week of January. That is the deadline date that all the marketing departments work all year to meet. Why the second week of January? Because, that is when the North American International Auto Show is held in Detroit.

The show has been held for thirteen years as an international event, but can trace its history back to 1907. In 1965, the Detroit Auto Show, as it was called then, moved to its

Things began on the evening of Sunday, January 7, with a bang. Ford sent out invitations for a party to introduce the 2002 Ford Thunderbird. (See photograph 1.) When we arrived at the Cobo Arena (where the Detroit Pistons used to play), we found the hall set up for a concert and decorated with roses. After a lot of good food and drink, there were speeches about the original Thunderbird and its impact on the auto industry. It was referred often as an "American Beauty." When the big moment came, the lights dimmed, spotlights came on, simulated rose petals rained from the

Continued on page 100

The 2001 Detroit Auto Show

by
Steve
Young

Continued from page 98



2. Ray Charles appeared at a party hosted by Ford to introduce the 2002 Ford Thunderbird.



3. The 2002 Saturn VUE will be the first SUV from Saturn and will be available in the fall of 2001.



4. The Land Rover Freelander is one of the best selling SUV's in Europe.



5. The Volvo "Safety Car" concept. While not a production vehicle, it hints at things to come.



6. The electrically powered three-wheeled Corbin Sparrow is technically a motorcycle, sells for under \$15,000 and is available in a variety of colors.

sky and the 2002 Thunderbird made its entrance with Ray Charles in the passenger seat. Needless to say, the concert was amazing and the car was gorgeous. (See photograph 2.) Nevertheless, I just couldn't help but think how much more publicity the event would have received if Ray Charles had been in the driver's seat!

The rest of the week included press conferences with all the other manufacturers from Daewoo to Lamborghini. Looking at the show from a locksmith's point of view, I spent most of my time talking with engineers, asking questions and explaining to the representatives why I wanted to look at the key for the car as well as the car itself.

I inspected the lock linkages on the 2002 Saturn VUE. (See photograph 3.) The VUE (pronounced "View") will be the first SUV from Saturn and will be available in the

fall of 2001. It also uses a new door latch with a linkage that moves to the rear in order to unlock the door.

Transponders were everywhere. Everyone is getting into the act from Hyundai on up. I spent half an hour with a Toyota representative who had no idea that replacing a lost set of keys for an Avalon could cost as much as \$3000 at the dealership. When I asked a Volkswagen representative what sort of procedures they were putting in place for owners who lost their keys, I received a baffled look and was told, "We give them three keys."

The BMW style "deadlocking" feature is alive and well and is spreading to other vehicles. The Range Rover (see photograph 4) has been equipped with this deadlock system, which Land Rover calls "Superlock," for over a year now. It will be standard equipment on the new Land Rover Freelander, as well as the new Mini Cooper S. Now that Land Rover is owned by Ford rather than BMW, these "Superlock" systems could find their way into other vehicles such as Volvo, Jaguar or Mazda, which are also owned by Ford.

Speaking of Volvo, their press conference introducing their new "Safety Car" concept vehicle was given a lot of attention by the press. (See photograph 5.) The last time Volvo introduced a "Safety Car" concept, it was put into production within two years, almost unchanged from the original concept as the Volvo 240. This year's Safety Car featured see-through



7. The Pontiac Vibe will be on the streets in 2002.

"A-Pillars," the structural members that support the roof at the edges of the windshield. This Safety Car has no locks at all; biometric devices that read the owner's thumbprint and control the ignition, doors and trunk. In addition, "heartbeat sensors" would alert the driver and prevent the doors and trunk from locking in an effort to keep small children from becoming trapped in the car. These same sensors would also alert the driver if someone were hiding inside the car.

The electrically powered three-wheeled Corbin Sparrow is technically a motorcycle, sells for under \$15,000 and is available in a variety of colors. (See photograph 6) The Corbin Merlin is similar to the Sparrow but it uses a two-cylinder V-twin gasoline engine

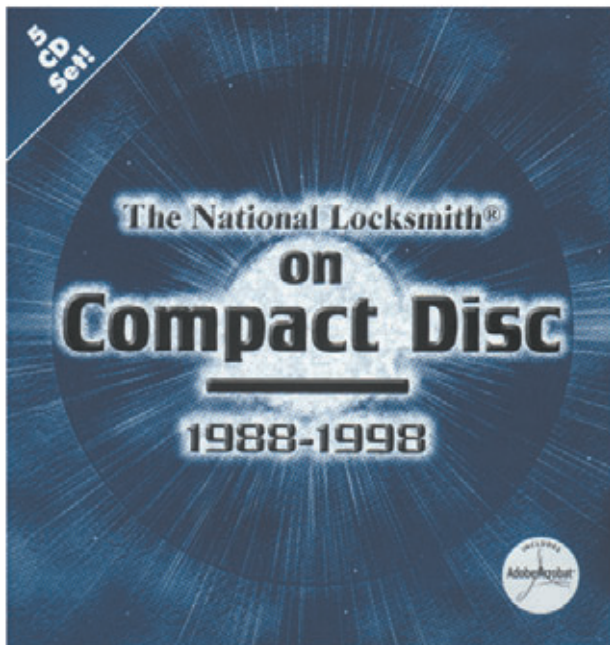
that can develop as much as 150hp. The Sparrow has been available for some time, but the Merlin will not be available until late 2001. Each vehicle only has three locks, one on the door, one on the ignition and one on the rear hatch. Each lock not only requires a different key, but also uses different key blanks.

A trend that I found disturbing was that many of the new cars use bicycle-style cables inside the doors instead of linkage rods. This effectively eliminates the use of traditional car-opening tools to unlock these



8. The 2002 Ford Explorer features the same cable-operated latch system that is used in the Lincoln LS.

vehicles. A partial list of these vehicles includes: all the new Toyota products, the 2002 Pontiac Vibe (see photograph 7) a joint venture between GM and Toyota, the 2002 Isuzu Axiom that goes on sale in April of 2001, the 2002 Ford Explorer (see photograph 8) and Mercury Mountaineer that went on sale in March of 2001, the 2002 Infiniti Q45, the 2001 Dodge Stratus Coupe, the 2001 Hyundai Santa Fe and others.



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9. The 2001 Corvette, like many other new vehicles has done away with the passenger side door lock.



10. The legendary Mini-Cooper S will be reborn in the US late in 2002 is priced at around \$18,000.

If this trend continues, we'll all need to work harder on our lock-picking skills. And if you live near an ocean like I do, you will probably see these cable systems coming in for service as the salt air makes them corrode and become difficult to operate.

On a lighter note, the trend of doing away with the passenger-side door lock and sometimes the trunk lock continues. BMW started this about five years ago, and now it seems to be spreading like wildfire. The manufacturers have embraced this as a way of simultaneously giving their vehicles "European Flair" and saving money. Several of the vehicles that I saw at last year's show, such as the Corvette (see

photograph 9) and the Nissan Sentra GXE, were back with no lock on the passenger door this year. Some manufacturers do the job right and remove or shield the latch bellcrank as well as remove the lock while others simply leave out the lock and continue to use the same latch. If the lock is removed and the latch bellcrank is left unprotected, the vehicle becomes extremely easy to unlock with a Slim-Jim. In the case of the Sentra GXE, the latch is extremely well protected, but on the Corvette, the latch was left vulnerable - go figure.

My personal favorites of the show were the new Mini Cooper S (see photograph 10) and the Cunningham C7. I loved the Mini not because it was new, revolutionary or particularly beautiful, but because it took me back to my youth. At one time, I had three Minis - it took that many just to keep one running most of the time. I fell in love with its ability to corner like a go-cart and stick to the road like glue. When the new Mini, which is supposed to be priced at around \$18,000, comes out, I'll be at the front of the line to test-drive one and maybe to buy one.

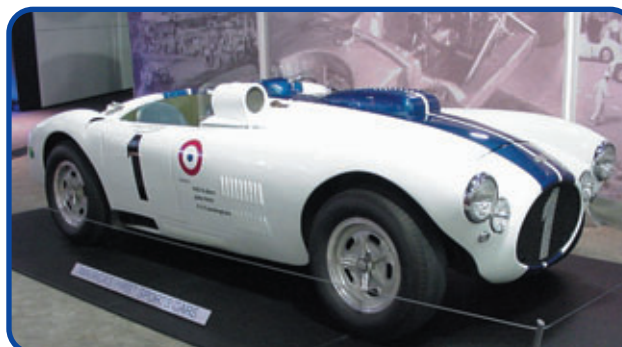
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#AE - CD



11. The Cunningham C7 is a "Virtual Car".



12. The Cunningham C1 was decades ahead of its time and America's first true European-style sports car.

The Cunningham C7 (see photograph 11) is not a real production car - yet. The company is billing itself as a "Virtual Car Company," but it is backed by some of the biggest names in the auto industry. The car itself is just plain drop-dead gorgeous! If they can get this vehicle into production, they will really have a winner.

The Cunningham C1 (see photograph 12) was decades ahead of its time and America's first true European-style sports car. In the early 1950s this amazing vehicle and its designer, Briggs Cunningham, became a legend in automotive history.

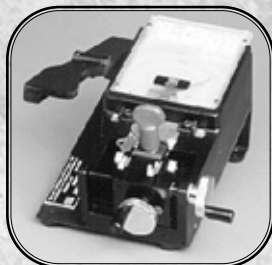
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4th Prize

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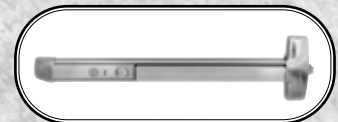
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6th Prize

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7th Prize

Detex Advantex



8th Prize

Arrow 400 Series Alarmed
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Plate Kit for Narrow Stile
Aluminum Doors



9th Prize

\$500 in BWD Products



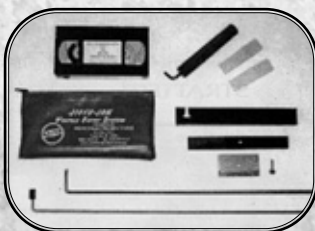
10th Prize

\$500 in ASP Auto Locks



11th Prize

\$500 in Strattec Auto Products



12th Prize

Tech-Train "Jiffy Jack"



13th Prize

Sargent & Greenleaf 6120
Electronic Safe Lock



14th Prize

High Tech Tools
2000 Pro Set



15th Prize

Slide Lock's Master "Z" Tool Set



16th Prize

ESP Products Sampler



17th Prize

Major Manufacturing's
HIT-111 Drill Guide



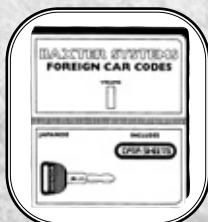
18th Prize

Abus Padlock's Marine
Padlock Display (\$120 Retail)



19th Prize

MBA USA, Inc.
Falle Pick Set



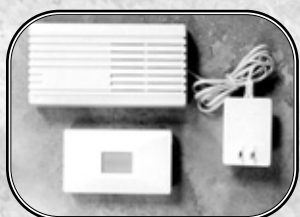
20th Prize

Baxter JV-1 & JV-5
Code Books



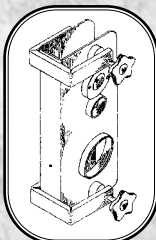
21st Prize

Sieveking Products
Squeeze Play



22nd Prize

Rodann's RV500 Wireless
Door Annunciator System



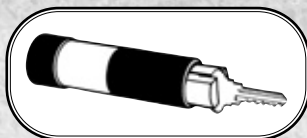
23rd Prize

A-1 Security Manufacturing
Installation Jig



24th Prize

Keedex Sampler



25th Prize

Framon
Impressioning
Handle



26th Prize

Gator Tool Multi-Purpose
Facecap Tool

These Prizes Awarded Each Month!

- BWD Automotive Ford or GM KwiKit
- Wedgeco™ Key Extractor Kit
- Strattec Racing Jacket
- HPC Air Wedge™
- Sargent And Greenleaf 4400 Series Safe Deposit Box Lock
- A-1 Security Products
- ILCO Key Blanks (100 Blanks)
- Keedex "SPIN OUT" Screwdriver
- Tech Train Training Video
- Sieveking Products Gm E-Z Wheel Puller
- Major Manufacturing Products
- Slide Lock's "Z" Tool Opening Set
- The Sieveking Auto Key Guide
- Jet Key Blanks (100 Blanks)
- High Tech Tools
- LaGard Combo Guard

Send in your tips, and win!

How To Enter

Send a tip on how to do any aspect of locksmithing. Certainly, you have a favorite way of doing something that you would like to share with other locksmiths. Write your tip down and send it to:

Jake Jakubowski, Technitips Editor,
The National Locksmith
1533 Burgundy Parkway
Streamwood, IL 60107-1861

Or send your tips via
E-mail to: Natllock@aol.com

Rules & Regulations

Each tip submitted must include your full name, street address (no P.O. Box numbers), city, state, zip code, phone number, fax number or e-mail address.

Every Tip Published Wins

If your tip is published you will win one of the monthly prizes listed. At the end of the year, we choose winners from all the monthly tips published, that will be awarded one of the fabulous year end prizes. All you have to do to win is enter.

Prizes are arranged according to suggested retail price value.

Tips Start
on Next Page



**BWD KWIKIT WINNER:
AMSEC 7-1/2" Round
Door Opening**

I was called to a local car wash to check out a safe that would not unlock. The safe, which was an AMSEC Star 7-1/2" round door with a Medeco key lock, was mounted in the wall, about 2-feet off the ground in the car wash bay.

The key would turn, but it wouldn't retract the bolts. Since there was a couple of other identical safe heads at the car wash, I took the back cover off one to determine what was causing the lockout. The first thing I noticed was that there was a loose nut holding the lock bolt cam to the Medeco cam lock. After seeing the loose nut, I figured the problem with the first head was the same. On the head I was checking, I used Locktite® and put a keeper on that nut before putting it back in service.

I called AMSEC and after discussing different opening options with them, I decided to drill for two of the locking bolts and push them back to open the safe. With the safe open and the back cover removed, I found the nut holding the lock bolt cam to the Medeco lock had indeed come loose. When the nut loosened sufficiently, it allowed the lock bolt cam to pull away from the cam lock, creating the lock out.

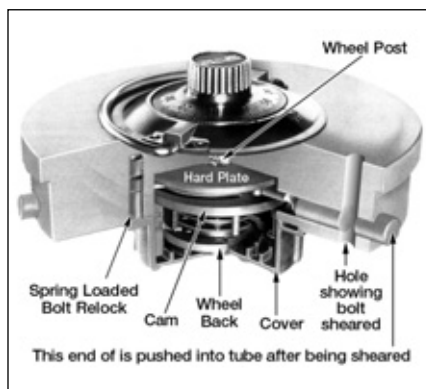


Illustration A.

After examining the head, I feel that it could have been opened a little easier if I had drilled a hole about 1-1 1/2" to the right of the lock, and used a hook tool to reach in and pull the lock bolt cam back onto the shaft. Then I could have used the key to retract the bolts.

If I ever have the chance again I will give that technique a try first.

*Chris Shook
Tennessee*

Editor's Note: Chris, the main thing is you got the unit open. Your idea of drilling a hole to pull the cam into place is good, except you have a piece of floating hard plate in your way.

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A Few Words From Jake...

It's easy to enter the Technitips contest! Just mail your tips to Jake at: The National Locksmith, Technitips, 1533 Burgundy Parkway, Streamwood, IL 60107. Or e-mail us your tip to tipsed@gloryroad.net. It's easy to enter, and can be even easier to win!

Just to set the record straight, I want each of my readers to know that I am not infallible. Now that might come as sort of a shock to some of you, but every now and again, I make a boo-boo.

And I did just that when I printed a tip about removing the high-security locking lug nuts from today's cars. Wasn't anything wrong with the tip, it had to do with my note that I appended to the tip.

You see, in the Editors Note, I told Richard Vonasch of Illinois, that although his tip would work very well, there was no need to ruin a perfectly good socket because he could buy removal tools from Snap-On, Cromwell and nearly any auto parts store he chose to patronize.

Nothing wrong with that advice either. Except it wasn't complete. You see, I committed what is known as a sin of omission! I failed to mention one very important source for these tools! Lock Technology Inc., of Naperville, IL.

Boy, is my face red. I guess it was a case of not being able to see the forest for the trees. At any rate, Lock Technology Inc., supplies a bunch of locksmith tools and equipment including a set of removal tools for taking the tapered or specially designed security lug nuts off. So, if you have a need of any specialty tools, give Lock Technology Inc. a call at: 800-421-7231, and tell George Stockin, I told you to call.



**by Jake
Jakubowski**

Besides, you wouldn't know for sure that a dropped cam was the cause of the lockout. A fast, effective way of opening this Star-style head is to shear the bolts. Bolts are located at 4-37-71 (if it had a dial). Once you locate your bolts, measure out 3-1/4" from the spindle center (or cam lock center) and drill a 5/16" hole through the head, shearing the bolt. Then repeat for the other two bolts. See *illustration A*, from my book "The Fifteen Minute Safe Opening Technique" that shows you how to quickly open most round head, lift-out doors.



**WEDGE CO KEY EXTRACTOR
WINNER:
Showcase Lock
Modification**

When a customer called and said he needed some locks for glass doors on display cases, I threw several sliding showcase locks in the truck and headed out. To my surprise, the doors were not the sliding type, but a pair of out-swinging glass doors.

A few phone calls convinced me that none of my suppliers had anything like what was needed to secure these cases. I decided to see what I could design that would look good and satisfy the customer.

Here's how I modified a standard showcase lock to secure the double door display case.

First, I cut off the part of the showcase lock's tang where it would normally bend around the glass. Next, I flattened the tang and twisted it 90° in the middle so one end (the end where I drilled my hole) could be attached to a shelf inside the cabinet; and the other end (the serrated end) would protrude between the glass doors. See *illustration B*.

Then I ground one side of the lock

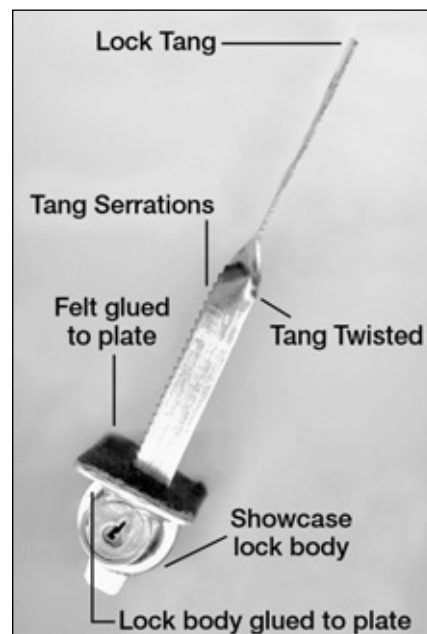


Illustration B.

body flat and attached it with a heavy-duty epoxy to a piece of scrap I made a lock backing plate out of. (See illustration C.) Of course, I cut a small slot in the backing plate that would match up with the "throat" on the lock that the tang slid into.

I glued a piece of felt to the back of the plate (the part that would rest against the glass).

I attached the tang to a shelf with the serrated end protruding between the glass doors. I then slid the lock body over the tang with the felt side facing the glass and "snugged" it down.

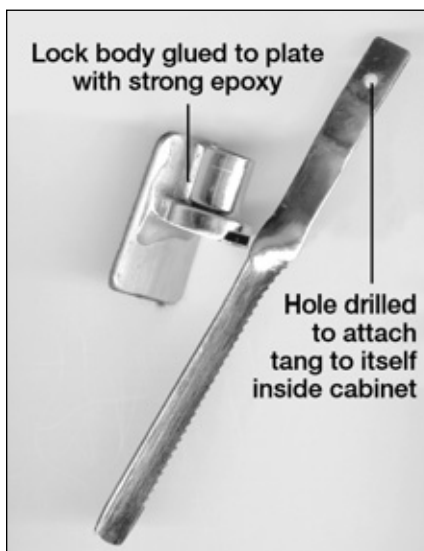


Illustration C.

My modification worked well, and the customer was very pleased. Of course, I charged accordingly for all of the specialty work.

Steve Cavazos, Sr.
Texas



STRATTEC WINNER:
Pontiac AZTEC
Opening

I was called to open my first 2001 Pontiac AZTEC and couldn't find anything in the manuals that I have regarding this vehicle. I tried picking the lock, with no success.

Looking the vehicle over, I thought there was enough gap between the window and the door to allow me to use an under-the-window tool. I elected to use the long-reach tool and it worked fine.

The only problem is that the lock button is very hard to see, especially in the dark, as it is the last button to the rear of the panel on the door. I had the customer guide me to it by looking in the opposite window.

As it turned out, opening the AZTEC with an under-the-window tool is an easy

opening -especially after the first one!

George Steiner
Nevada



HPC WINNER:
File Cabinet Opening

I'm new to the business and although this tip might seem basic to some, I thought it would help others like myself.

I was asked to open a fireproof file cabinet with a malfunctioning lock. The key would turn, but the lock would not release.

I remembered reading somewhere that you could sometimes pull the locking

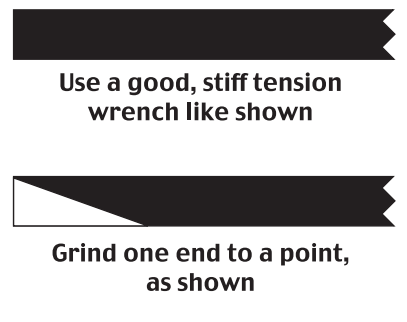
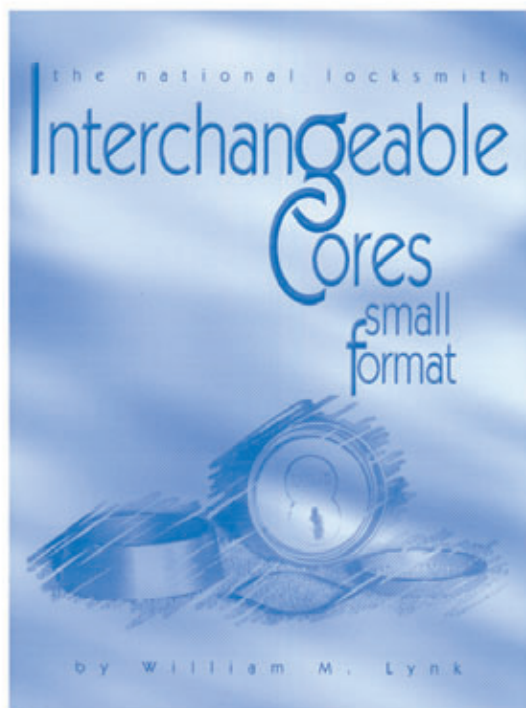


Illustration D.

lug down through the keyway. Not having any tools designed for this, I took the stoutest tension wrench that I had

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and ground it as shown in *illustration D*.

I inserted the modified tension wrench into the keyway and with just a couple of tries, manipulated the locking lug and unlocked the cabinet.

*Frank Kitchen
Indiana*

Editor's Note: Locksmasters has a set of "knives" that are designed to open this type of lock as well as suitcases and briefcase locks. Thanks for the tip.

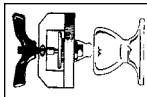


**SARGENT & GREENLEAF WINNER:
Opening Tool Marking
Tip**

As I get older, it's harder for me to see the numbers on the shaft of my opening tools. My Z tool has a 1, 2, or 3 on it and the numbers are darned hard for me to see. So, I got my ol' Dremel Tool out and cut one slot at the one mark, two slots at the two, and three slots at the three.

I did it on both sides of the tool and even at night I can just feel for the slots now and know I'm on the money.

*George Henderson
South Carolina*



**A-1 SECURITY
PRODUCTS WINNER:
Adams Rite Opening
Tool**

Here is an old trick I had forgotten about until I found my homemade tool in the bottom of my old toolbox that I now use for old parts.

I pulled out a length of flat steel spring stock about 1/4" or so wide, with a notch cut at the end. The reason this caught my eye was because the notch was similar to the cut-out on a Slim Jim.

This is my old Adams Rite double door killer. I would slide the steel stock between the double doors and then between the A/R bolt and the cover trim plate. I was aiming for the actuator that the mortise cylinder cam would hit to throw or retract the bolt.

Hook onto the cam and then simply pull down and viola, the door is open. Works great when you would rather open the door than destroy a high security cylinder. Unfortunately, at this time I haven't been able to figure out how to get it to work on a single door.

*Robby Stout
Texas*



**ILCO KEY BLANKS
WINNER:
Extraction Tool From
Jig Saw Blades**

Aside from my spiral extractor tools, the extractors that I make from coping saw blades are the extractors that I have

the most success with.

A pack of assorted size coping saw blades provides various lengths, widths and sizes of tools. I cut each blade in half to form two tools by shaping and or thinning, with my Dremel Tool.

To add a comfortable grip, I simply dip on end in liquid plastic. Or, you could wrap one end with plastic tape.

*Leonard Downing, CPL
Oregon*



**KEEDEKX WINNER:
Falcon I/C Opening**

I got a call from a customer who claimed his knoblock was stripped. He said his key would turn completely around in the cylinder. I knew from his description that the tailpiece was broken. It turned out that the lock was a Falcon I/C knoblock.

I used my new I/C pick set to pick the core to the control shear-line and remove it. With the core out, I saw that the two prongs that are connected to the sleeve drive assembly were broken off flush with the back of the sleeve. There was nothing I could use to trip the latch since the actuators were broken off flush.

Looking in the sleeve I decided to drill a 5/32" hole through the back of the sleeve drive. Then I used a #2 Phillips screwdriver to turn the drive assembly, trip the latch and open the door.

*Jonathan Muhammad
Georgia*

Editor's Note: Jonathan, drilling the hole and using a Phillips head screwdriver was a workable solution. I keep several small-bladed straight screwdrivers that I have cut serrations on with my Dremel tool. I use them for problems like the one you describe. The serrations on the blade grip a broken spindle, worn lug or whatever and allow me to apply turning pressure. Thanks for the tip.



**TECH TRAIN TRAINING
VIDEO WINNER:
Keep A Tight Light**

Here is a very small trick that may save some of you locksmiths a lot of grief. I use a Tech-Train TT-1510 inspection light, which works quite well. Unfortunately, the Krypton bulb gets very hot, and with repeated usage - and vibrating around in the van - the bulb will slowly loosen.

One of my bulbs dropped off inside a car door. At \$14 a pop, I need to make these bulbs last as long as possible. One way to keep the bulb attached is to use some heat shrink tubing. Cut a 3/4" long piece and slide it on until it centers over the joint. Use a match or an electric

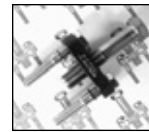
soldering iron to shrink the tubing.

The tubing can be cut off with a sharp knife if the bulb burns out and needs replacement.

*Terry Leonard
California*

SIEVEKING PRODUCTS GM E-Z WHEEL

**PULLER WINNER:
Finger Nail Polish
Trick**



I'm fairly new to the trade and during the process of learning the basics of impressioning, I found that rather than "smoking" the blade of the key to blacken it, I had better luck using a bright red nail polish!

Applying a thin coat of the nail polish to the edge of the blade helped me see the impressioning marks better. It dries quickly, leaves a clear mark and relieves me of a lot of tedious filing time.

*Frank Ortiz
Florida*

**Major
MANUFACTURING, INC.**

**MAJOR
MANUFACTURING
PRODUCTS
WINNER:**

Extra Long Follower

It's a long story about how I wound up having to rekey nearly one hundred Sargent mortise cylinders in "kit" form. The customer (a hospital) had ordered the cylinders and somehow or the other, wound up with the cylinder components (The Kit) rather than a zero bitted cylinder.

That meant I had to insert the springs and drivers in each cylinder as well as pin the plugs. I thought that if I could come up with a way to apply an "assembly line" technique to the job, I might be able to get it done faster.

I obtained some rigid plastic tubing (.048") from a friend's fabrication shop and cut it into 18" lengths. On one end I wrapped electrical tape to keep the cylinders from slipping off. On the other end I cut a notch that the end of a plug would fit into.

As I loaded the springs and drivers in each cylinder, I would slip the cylinder off my regular follower and onto the extra-long follower. When I had twelve or so cylinders on my special follower, I would tape the other end to keep the cylinders in place until I was ready to use them.

After filling up eight of my special followers, and cutting the keys, I was ready to start pinning the plugs. As I pinned each plug, I would insert the end of the plug in the notch in the extra-long follower and slide one cylinder over the plug. Then I attach the tailpiece, put the

Continued from page 110

cylinder in a marked bag and went on to the next one.

I estimate I saved about eight or ten hours of "bench time" by using the long plastic followers.

*Jimmy Deal
Minnesota*



**SLIDELOCK'S "Z" TOOL
OPENING SET WINNER:
Rekey Box**

I recently found a nice compact box that is very useful in master keying jobs.

It is the #3414 double-sided storage box from Plano. It has 11 compartments on one side, which are perfect for bottom and master pins, and 3 larger compartments on the back side which holds my followers, shims, and extra top pins.

This is a nice box for keying multiple keyed alike locks. Instead of hauling your complete pin kit around, just slip this into your jacket pocket. You can pick these up from Wal-Mart in the fishing tackle area for around \$2.00.

Also, here's a quick tip for removing mortise cylinders. For those cylinders that won't turn by hand, just insert a non-working key into the lock and turn the cylinder out. This sure beats marring the cylinder with pliers and it works about 98% of the time.

*Jim Pakkala
Michigan*

Editor's Note: Jim, thanks for the Plano tip. I have been using Plano boxes to grab extra storage space in my van and carry pins, cylinders, keys and tools from the van to the door for years. Plano makes a variety of tackle boxes and I think there's a shape, size or design for almost anything a locksmith might want to use them for.



**1995 THE SIEVEKING AUTO
KEY GUIDE WINNER:
Flexible Inspection
Light Idea**

I am a locksmith apprentice from New Zealand. Since we have to import nearly all our trade tools, our locksmith tools are very expensive. This is an idea for an inexpensive, flexible and virtually indestructible inspection light. This light is ideal for safe and automotive work.

From an electrical supplier I obtained one meter of 4mm fiber optic cable and some heat-shrink tubing. From a plumbing supplier I purchased a pair of rubber faucet ends (these are used for connecting a hose to the normal inside faucets), and from a hardware store I

acquired some 1.6mm galvanized tie-wire.

I laid 500cm of fiber optic cable and 500cm of the tie wire beside each other and then slid the heat shrink over both pieces. (See Illustration E.) The wire gives the fiber optic fiber rigidity. Making sure the two items were aligned properly, I heated the heat-shrink tubing so it tightened over the cable and wire giving a nice tight fit. Be careful not to overheat the heat shrink tubing or everything will melt together.

Next (refer to illustration) I attached the cable and wire covered in heat-shrink tubing to the rubber faucet end. I had to make an adapter to ensure a nice tight fit. To the other end of the rubber faucet adapter, I attached a Mini MagLite. Because the faucet adapter its rubber it allows for a nice tight fit,

The fiber optic cable can be bent into nearly any position without losing any brightness. Because there are no bulbs to blow or break, there are no added costs later on down the track. Also, since the MagLite has an adjustable beam, I can focus the light source.

*Daniel Overend
New Zealand*

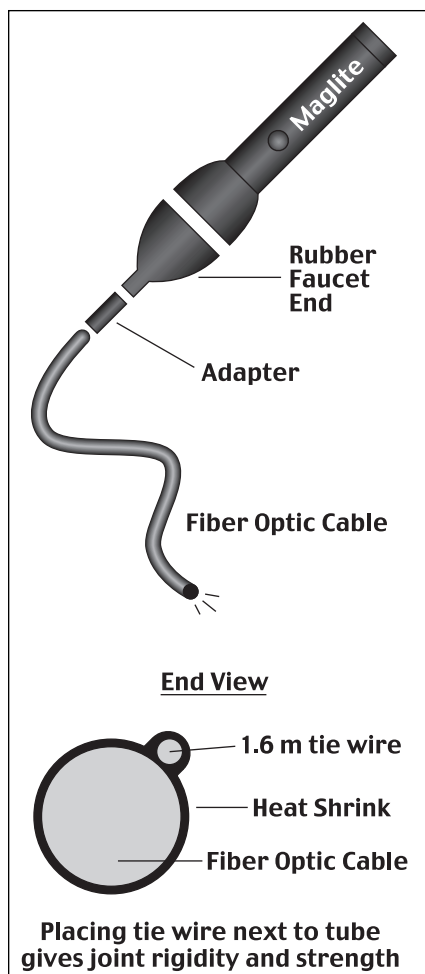


Illustration E.



**JET KEY BLANKS
WINNER:
Unusual Followers**

If you come across a weird size lock, like a mailbox locks or cam locks, and can't find the right size follower, the broken shaft from a golf club with its stepped down diameter works perfectly.

Just find the size you need and cut off that section with a pipe cutter and use a Dremel Tool to form the end you need.

I can get all of the used or broken clubs I need from my local golf shop for free.

*Kirk Lebert
Canada*



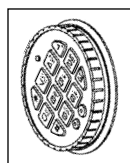
**WINNER:
Brushing Up on File Marks**

Like most locksmiths, I'm always looking for ways to make my job a little easier and when possible, save some time.

I've found that when impressing, it helps if I use a small wire brush (about the size of a toothbrush such as used for soldering work) to clean up my file marks. This brush is small enough to get into the grooves of the key and leaves a smooth, clean surface.

I find it especially helpful on those locks that leave very faint marks, since some of the file marks might be confused for impression marks.

*Charles Godwin
Massachusetts*



**LAGARD WINNER:
Collection Tip**

There is nothing more frustrating than to be called for a residential, business or automotive lockout, and get stiffed for your fee. I've had it happen with both individuals and businesses.

Now, when I'm called on a lockout (especially after hours) I specify that we get paid "in cash, when we arrive, before we open."

Have we lost any business by doing this? Possibly. But, the upside is that I have eliminated my "bad check" file and don't have anywhere near the hassles with people who didn't have the money, but had me come out anyway.

I'm don't know how this policy will work for others but it sure works for us.

*John Carmondy
Pennsylvania*



BUSINESS BRIEFS

ABUS Padlock Certification Course

ABUS is now offering Certification Courses for padlocks and motorcycle security products. Product knowledge and training for the ABUS line of padlocks and motorcycle security products. Classes include special functions such as "window pinning" of cylinders, product specification, proper product application and padlock security levels will be covered. Key control padlock systems, Freon spray prevention, and innovations in high technology padlock security will also be covered. Locksmiths should have a #2 phillips, and tweezers for class participation. Other tools will be supplied. A "fastest fingers" contest will be held at the end of the class for prizes.

For additional information on class schedules please call (800) 352-2287. Circle 324 on Rapid Reply.

Jet Auto SUV Truck Guide

Jet Hardware has issued a Key Blank Guide for auto's SUV's and trucks for early 2002 and prior years. The 36-page reference tool is indexed by manufacturer and model and has key blank cross reference information from EZ to Jet and Ilco to Jet. The guide also contains a transponder key index for 36 different vehicle applications on models from 1996 to 2002

Lockmasters Security Institute's Training

After 45 years of working with government and military offices, Lockmasters training is now available through GSA Schedule. On September 28, 2000, Lockmasters was awarded a five-year contract for Instructor-Led Training and Development for Course Materials, Schedule #69.

Each of Lockmasters' regularly scheduled courses is available on the schedule under contract number GS-02F-0040K. The training courses themselves are listed under Special Item Numbers (SIN) 27-400 and 27-500. SIN 27-400 directs Instructor Led Training. This SIN refers to any of our regularly scheduled classes. From controlling workplace violence to professional locksmithing, this item number includes all of our classes. SIN 27-500 refers to Course Development and Test Administration.

Pyramid from ACE Lock & Security Supply

Corbin Russwin's Pyramid patent-pending security cylinder is now available from Ace Lock & Security Supply. Recommended for installations requiring superior protection against picking, drilling and other surreptitious entry, the new locksets high security protection is underwritten by UL437 standards for interchangeable core cylinders. The security this cylinder offers is key control, maintained through sequentially coded registration certificates which provide the ultimate protection against unauthorized key duplication. The cylinders employ a patent-pending 7-pin locking mechanism that requires the use of a proprietary patent-pending key. The keys are made from nickel silver,



ideally suited for high usage and abusive applications.

For more information contact: Ace Lock & Security Supply, 565 Rahway Ave., Union, NJ 07083, Phone: (800) Ace-Lock, Fax: (800) Ace-Fax4. Circle 325 on Rapid Reply.

New Appointment from Special-Lite

Special-Lite has appointed W. Don Ruch as Vice President of Sales & Marketing. Don brings 30



year of experience in the architectural aluminum industry where he has held various management positions in sales, marketing, and operations with the Kawneer Company. His sales and marketing responsibilities at Special-Lite will include order pursuit, order processing and customer service.

ISC Cancels Chicago & Miami Shows

Association Exposition & Services (AE&S) has cancelled the ISC Security Expo at Chicago and ISC Security Expo at Miami events in favor of integrating the two regional events into its larger and internationally renowned International Security Exhibition & Conference (ISC EXPO) East and West shows. The Home Automation Show & Conference will co-locate with ISC EXPO/ East and West in 2001. "Both ISC/Miami and The Home Automation Show, co-located with ISC/Chicago proved to be successful for the targeted Southeast and Midwest markets.

SAFLOK Awarded Best Product Value


SAFLOK was presented the John Q. Hammons



Hotels, Inc. Best Product Value Award. All fifty-three of the Chief Engineers that attended the conference were asked to rank their top five vendors on the basis of product value. Out of a list of fifty-five preferred vendors of John Q. Hammons Hotels, Inc., SAFLOK was the highest rated vendor of the group, and as a result, became the recipient of the Best Product Value Award.

Gil-Ray Tools Sharpens Carbide Key Cutter Wheels

Carbide cutters are very delicate and brittle and need to be sharpened immediately when they first start cutting hard. A carbide wheel can start to chip apart on the cutting edges when the sharp edge wears off. A cutter with a couple of chipped teeth can still be sharpened. When a carbide cutter is removed from service right away, it can be sharpened several times. The typical amount that has to be ground away to restore the cutter to sharpness is only a thousandth of an inch or two; as compared to a dull HSS cutter that needs up to .005 thousands of an inch ground away. Gil-Ray offers a mail in sharpening service for all dull key cutter wheels. Worn cutters are restored to the original manufacturers specifications. Each blade is 100% inspected for accuracy during the precision grinding operation.

For more information call: (517) 892-6870; Web: www.angelfire.com/biz/GilRayToolsInc/. Circle 326 on Rapid Reply. 

The 2001 Chrysler Sebring Opening

by Tony Vigil



1. The Dodge Stratus.

Chrysler has just introduced its new line of vehicles for 2001. Among this new lineup is the all new Chrysler Sebring 2 door Coupe, 4 door sedan, 2 door Convertible, and its twin sister car, the Dodge Stratus. Ok, so we have a new car here, what's so special about that? Although we have one new car with two different name plates, each body style requires a completely different opening method!

Let's begin by categorizing the make. While all carry the name Sebring or Stratus, and each engine is the same, each of the three variations: the 4 door sedan, the 2 door coupe and the 2 door convertible, feature its own respective and unique lock system. That means lock professionals must correctly ascertain the make, model, year and body style of each vehicle before performing an opening.

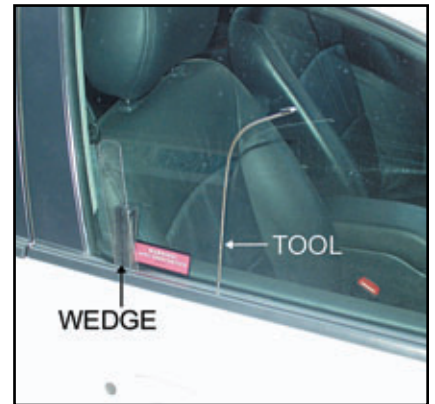
We will start with the 4 door Chrysler Sebring and Dodge Stratus. Both vehicles are standard Chrysler chaisses with simple vertical lock mechanisms. *Photograph 1*, shows the Dodge Stratus. For this opening, we will use the High Tech Tools #47 tool, also known as the 'S' tool. This tool hooks the vertical lock rod. (*See illustration A.*) First, insert the strip saver and wedge into the door to create an opening for the tool.

Next, lower the tool towards the rear of the passenger side door, as seen in *photograph 2*. Twist the tool handle to hook the lock rod, then simply lift the tool to unlock the door. (*See photograph 3.*) This is a standard opening made simple with the rubber tips included on the end of the 'S' tool. The rubber tips make hooking the metal linkage easy, saving time and therefore, money.

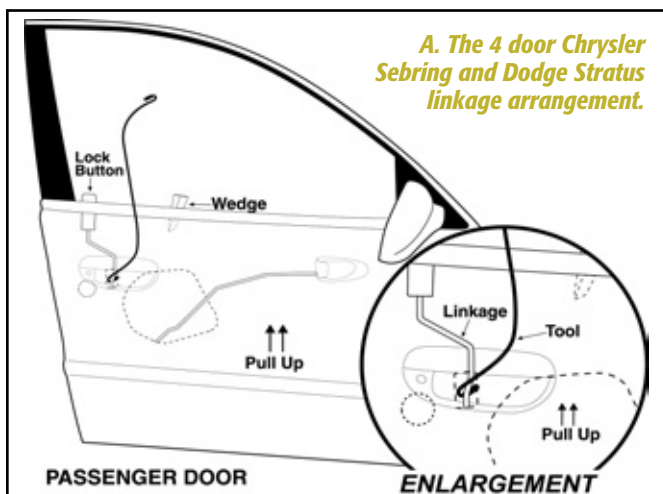
Now lets move on to the 2 door Sebring and Stratus. (*See photograph 4.*) These two cars feature all new lock systems for 2001, and are actually manufactured by Mitsubishi. The Sebring and Stratus are merely versions of Mitsubishi's popular Eclipse, and this opening works for the Eclipse as well.

These vehicles use a cabled lock mechanism, with no access to any linkage inside the door. Cabled systems are becoming more popular, and cannot be opened using traditional tool to linkage tools. Fortunately, the coupes have frameless windows making this car an ideal candidate for a High Tech Tools Remote Access Tool opening.

Begin by inserting the strip savers between the door glass and rear quarter glass. (*See illustration B.*) Then insert the large wedge from the Super Wedge System making a gap for tool entry. Now, using the slot in the small wedge to shield the glass, slip the tool into the door. (*See photograph 5.*) Using the tip of the tool to hook the door lock button. Pull back and presto, the door is unlocked. (*See photograph 6.*)



2. Lower the tool towards the rear of the passenger side door.



A. The 4 door Chrysler Sebring and Dodge Stratus linkage arrangement.



3. Lift the tool to unlock the door.

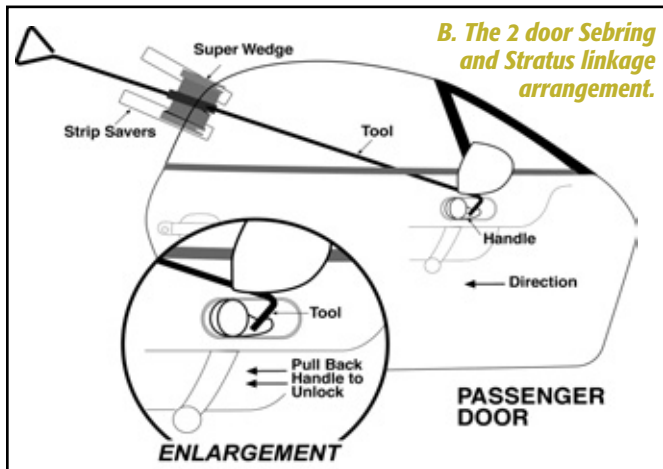
4. The 2 door Sebring.



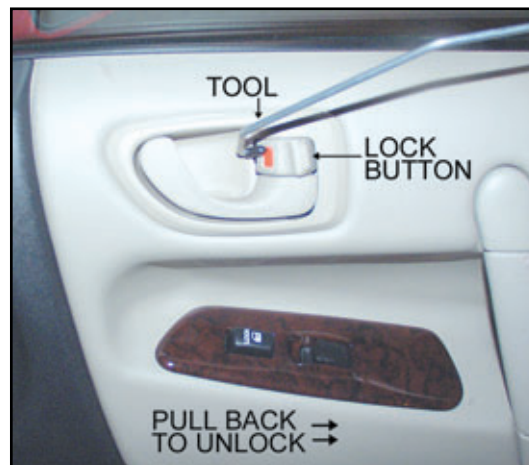
Two down and one to go. The 2 door Sebring convertible. There is no Stratus convertible. Unlike its hard top sister, the convertible has a standard lock linkage. (See photograph 7.) To unlock this vehicle, use the High Tech Tools number 54 tool. Lower the tool into the passenger side door with the tip pointing towards the front of the car. Note the insertion position is near the rear of the door. (See illustration C.)



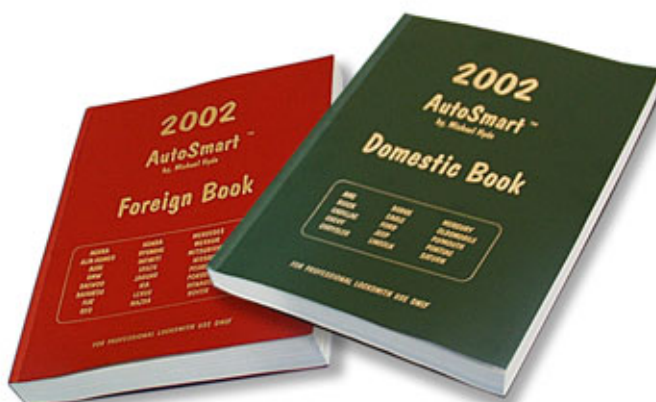
5. Slip the tool into the door.



B. The 2 door Sebring and Stratus linkage arrangement.



6. Pull back and presto, the door is unlocked.



2002 AutoSmart™

Major changes, additions and revisions to the AutoSmart Book™ have been made, and the 2002 AutoSmart™ is now available!



CLICK HERE TO LEARN MORE

Inside the door, there are two linkages which cross each other. The unique bend in the tool allows you to reach exactly the right linkage without getting caught in the wrong one. It is important to note the target linkage has a cloth

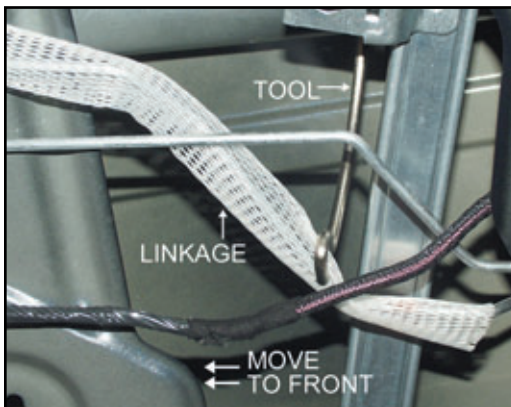
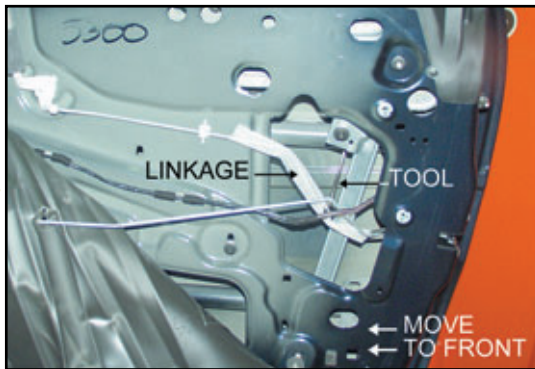
cover to prevent rattling and noise in the door. The cover does not interfere with the opening. (See photograph 8.)

The linkage runs up to a bell crank and then to the door lock button, which is in the center of the door. Hook the linkage with the end of the tool and move it forward to unlock the door.

If we can learn one valuable lesson from this series of cars (the 2 door, 4 door and convertible Sebring, Stratus and Eclipse) is that having the right information as well as the right tools is critical to a successful lockout business.

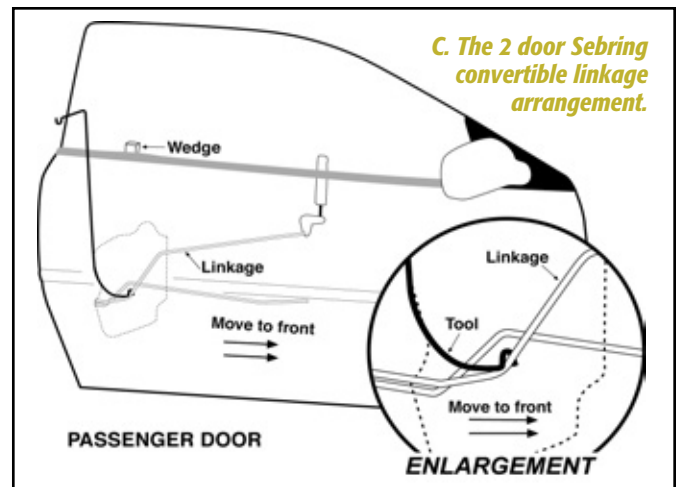
For more information contact High Tech Tools at: 1400 SW 1 Street, Miami, FL 33135. Phone: 800-323-8324; web: www.HighTechTools.com. Circle 303 on Rapid Reply. **TNL**

7. The convertible has a standard lock linkage.



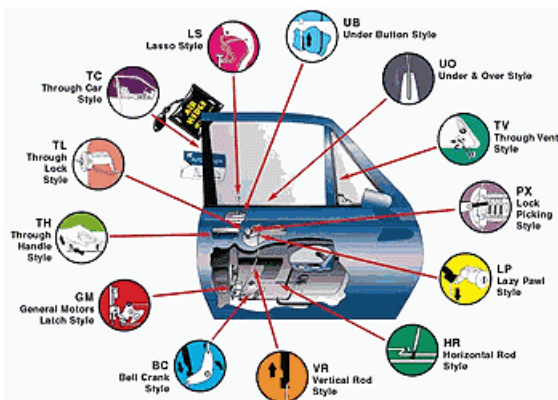
8. The cover does not interfere with the opening.

C. The 2 door Sebring convertible linkage arrangement.



How To Open Cars

Arm yourself with the best information possible by learning every known method to open locked cars!



CLICK HERE TO LEARN MORE





THE CASH STATION

by Mark Daniel

LeFebure Double Door



Safe Manufacturer:

LeFebure

Safe Size:

40" Wide, 52" High, 24" Deep

Door Size:

19" Wide, 49-7/8" High on each side.

Handle Type:

L-Handle

Handle Location:

25" Down, 5-3/4" over from opening edge of right door.

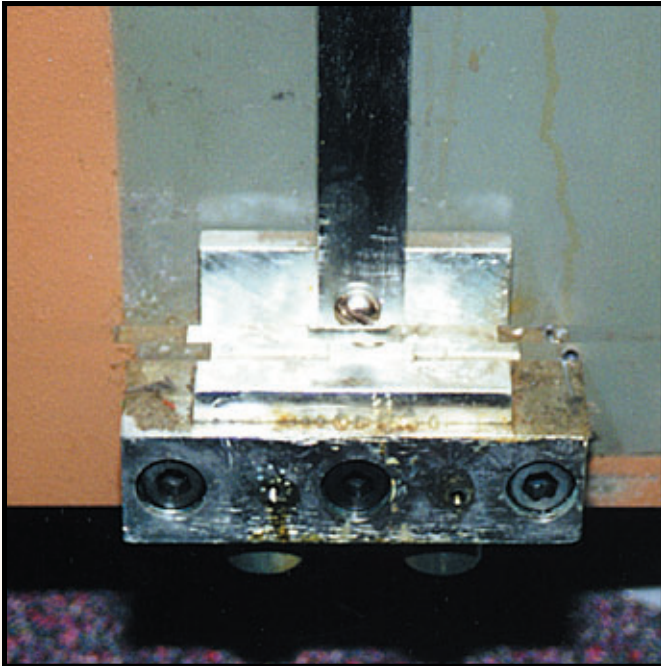
Handle Rotation:

Counter-Clockwise to open.

Dial Center to Handle Center:

4-3/4" Down, 1-3/4" Left of dial center.





LeFebure Double Door

Dial Location:

Dial center is 20-1/4" down from top of door and 7-1/2" from opening edge.

Number of Door Locking Bolts:

Two locking bolts with two pins each.

Door Locking Bolt Locations:

Bottom 6" & 8-1/8", Top 3-1/4" & 5-3/8" from opening edge of door.

Door Locking Bolt Diameter:

1"

Door Thickness to Bolt Center:

2-5/8"

Door Thickness to Lock Case:

1-1/2"

Door Thickness to Back of Lock:

2-5/8"

Combination Lock Type:

LaGard 1800

Combination Lock Description:

Three wheel, key-changeable lock.

Combination Lock Case Thickness:

1-1/8"

Number of Wheels:

3

Driver Location:

Rear

Combination Lock Handing:

Right Hand (RH)

Drop-In Location:

98

Forbidden Zone:

0-20

Combination Lock Opening Procedures:

Drill at drop-in and align wheel gates at lever fence.

Combination Lock Drill Point:

7/8" from dial center at 97.

Combination Lock Relock Trigger Type:

Wire spring. Activates when combination lock cover is removed or punched.

Combination Lock Relock Trigger Drill

Point:

1-5/8" Left of dial center, 7/8" down. Hook with a wire and pull towards front of safe.

External Relock Device Type:

N/A

Special Notes:

This safe has a common problem. The bottom bolt becomes detached from the linkage. The drill point for this is, 3/4" up from the bottom, 6" over from opening edge. A 1/4" hole will be necessary to pick the bolt up far enough to open the door.

BASIC ELECTRONICS

part 3



by
William C. Deutsch

A multimeter is the single most important tool in your Electronic Access Control (EAC) arsenal. An EAC technician without a multimeter is like a locksmith without a key machine. Are you serious about succeeding in access control? Then it is time to buy a meter and master its use.

Electronics catalogs will barrage you with options - true RMS, diode testers, serial port interfaces. What is important, and what is useless? This article will help choose the meter that is right for you.

Before we get started, remember the first commandment of tools: Never buy the cheapest. The multimeter, like any other tool in your box, should be durable and useful enough to last your entire career. I confess. I have broken this commandment, and now I wish I had all the money I have wasted on cheap meters.

A multimeter is designed to measure Voltage, Ohms, and Milliamperes. This is why you sometimes see them referred to as VOM meters.

Here is a quick overview of what you will be using the meter for:
Measuring Voltage

Is your 12-volt back-up battery really supplying 12-volts, or is it getting weak? Is your MagLock receiving enough voltage to maintain its holding force? These are the types of questions your meter will help you to answer. Not only will this help you track down the source of problems, but checking your main voltage inputs and outputs (i.e. the AC voltage entering a power supply, or the DC voltage at a strike) is a fast, effective way of verifying a clean install.

Measuring Resistance in Ohms

Ohms (abbreviated Ω) are the units of measure for resistance. If you do a lot of security work, measuring resistance is vital. A hardwired sensor loop should have a resistor at the end. You can "see" that resistor by attaching your meter leads to the end of the loop. Testing door contacts and switches is another use for your meter. Are you unsure as to whether a door contact is normally open or normally closed? No problem. Touch each terminal of the contact with your meter. When you read infinite resistance, you know that current

could not flow through the contact - therefore it is open. When you read a very low resistance, you know that current can flow and therefore the contact is closed.

Measuring Current in Amperes

Amperes (abbreviated A) is the standard unit of measure for current. In most of your EAC work, you will be measuring current in milliamperes (mA), which are .001 Amps. Maybe you are installing a new access control system, and would like to use the existing strike. Of course the documentation is lost, so you have no idea how much current the strike is designed to draw. But, since you never leave the shop without your meter, you can activate the strike and read exactly how much current it is pulling. I'll show you how to do this in a future article.

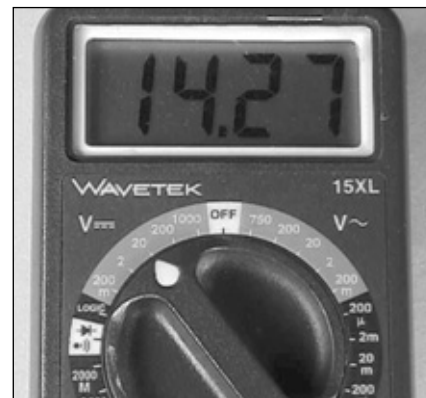
Choosing a Meter

Now you have an idea of what you will be using the meter for. In the next article, I will talk about specific applications, and you will learn some neat tricks.

In the meantime, you need to buy a meter and start using it. Here is a little help.

Remember that you need to test DC voltage, AC voltage, Resistance, and Current. Some inexpensive "pocket" meters do not measure current, but you should be able to measure up to 10 Amps of current. (Realistically, you will rarely measure anything over two Amps, but 10 is a common range.)

Make sure that you buy a Digital Multimeter (DMM). DMM's have a LCD with a digital readout of your measurements. Analog meters use a needle and a printed gauge. They are



1. A digital multimeter is recommended.

delicate and subject to “parallax error.” (That’s just a fancy way of saying they are hard to read!)

Here are some other features that are not necessary, but will prove useful in your work.

Auto Ranging: Before you connect your meter to a current or voltage source, you need to tell it the “range” (roughly how much current it will be reading.) The meter in the *photograph 1*, is set to read up to 20 volts DC. If you are unsure of the range, then you select the highest setting and step down until your reading is correct.

An auto-ranging meter makes your life easier because you simply connect it, and let the meter select the appropriate range. In my experience, however, using a manual ranging meter helps to cement some electronics concepts into your mind, and forces you to think through your measurements more carefully. But for convenience, nothing beats an auto-ranging meter.

Holster: If there is a rubber holster available for your meter, buy it. The DMM is an investment, and the holster will protect it if it’s ever dropped. Enough said.

Clip on Leads: Most high quality meters come with removable leads so you can substitute leads with clips on the end. Sooner or later you will find yourself on top of a ladder needing one hand to hold your meter, one hand to steady yourself, and two hands to hold the leads against your work. The clip on leads free up one or two of those hands. Get the picture?

Continuity Tester: A continuity tester makes an audible “beep” when you connect it to a complete circuit. This immediately tells you if a circuit, switch, or contact is opened or closed. You can get the same information from an ohmmeter, but the continuity tester is helpful for a quick diagnosis, especially in low light!

In summary, here are some typical specs for an auto ranging multimeter that you can use in your EAC work. Expect to pay \$50 - \$70.

- DC voltage 600V max
- AC voltage 600V max
- AC/DC current 10 A max
- Rubber holster

Local electronics stores are a good source for purchasing a meter. Here

are a few online resources to check as well:

Newark Electronics,
www.newark.com

Allied Electronics,
www.alliedelec.com

Radio Shack. This site features their brand, as well as name brands such as Wavetek.
www.RadioShack.com.

Next month, we will start to look more closely at how a meter works, and how it will improve your efficiency on the job. In the meantime, here is your homework: Buy a meter and use it! Read the instructions and start measuring everything - batteries, electric strikes, door contacts, relays - everything.

Have fun!

William C. Deutsch carries his Wavetek 15XL everywhere. Sometimes this annoys his family. Especially at social gatherings.

TRL



How To Re-Key Cylinders

This software simplifies the process of re-keying various types of cylinders.

CLICK HERE TO LEARN MORE



#HT - RKC1



BMW Luggage Locks

by John
Blankenship

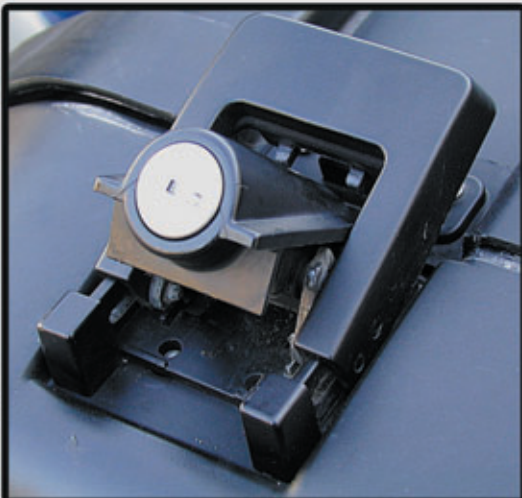


1. This style luggage is used on a lot of BMW motorcycles. Two of the lock/latches are visible and secure the lid. There is a third one on the forward side that secures the luggage to the motorcycle.

2. A close-up view of the lock used on this style luggage.



3. Raising the lock housing extends the latch back so it can be raised to release the lid.



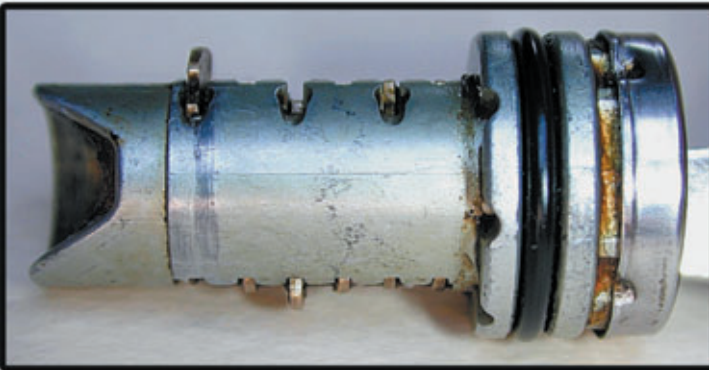
Continued from page 134



4. A dental mirror inserted under the raised lock housing reveals the brass wafer retainer that holds the plug in the cylinder. I used a hook tool to depress the retainer and pulled the plug out with a hook dental pick. It is tricky but it can be done.

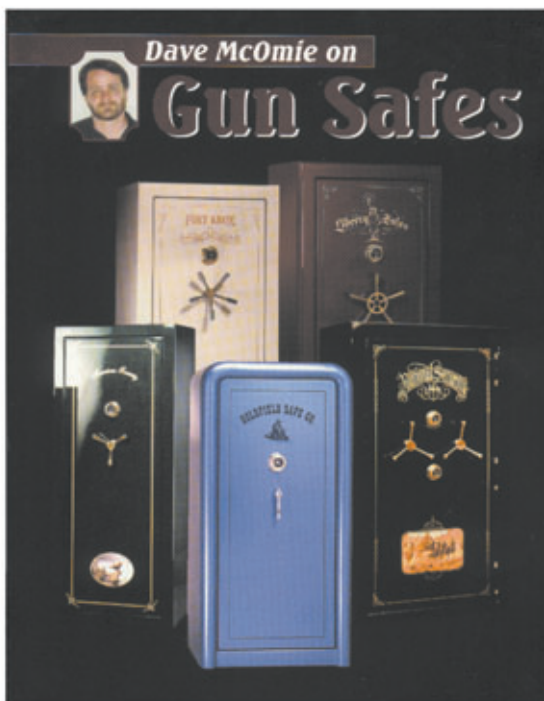


5. We need to insert a blank into the plug to read the wafers. The Silca NE31 (Ilco Y61) blank on the left will not fully enter the lock because the wards past the third wafer chamber are lower in the keyway and will not let it pass. The original Neiman blank on the right is precut one depth deeper from the third space to the tip so it will fully enter the lock. Prepare the NE31 blank by cutting spaces 3, 4 and 5 down one depth and then filing down the high spots all the way to the tip. A prepared blank is in the middle.



6. The plug contains five tumblers all on one side and the retainer. A prepared blank inserted into the plug shows what appear to be cuts of 11131. However, since the blank has been cut down one depth in the last three spaces the cuts are actually 11242. To complicate things even more, the codes for this lock use a #5 depth for no cut and a #1 depth for the deepest cut. Therefore the proper cuts for this lock are 55424. The codes are direct read bow to tip so the code for this lock is AA55424.

Continued on
page 138



Gun Safes

Need a drill point or
relocker drill point on
a gun safe?

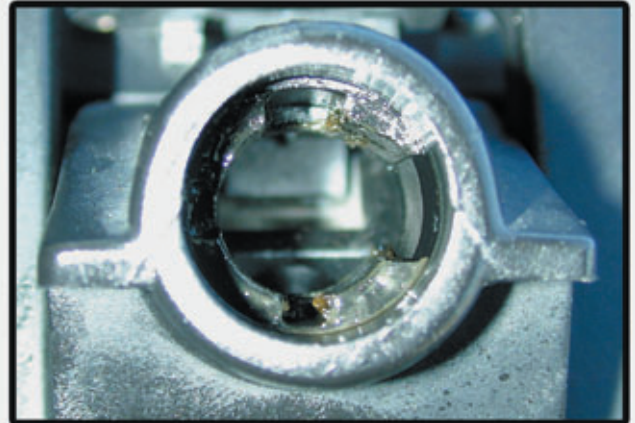
CLICK HERE TO LEARN MORE

#GS - 1

Continued from page 136



7. The prepared blank on the bottom already had cuts of 55444 so it was only necessary to cut the fifth space down to a #2 depth. The blank in the center operates all the locks on the luggage. The original Neiman key is on the top.

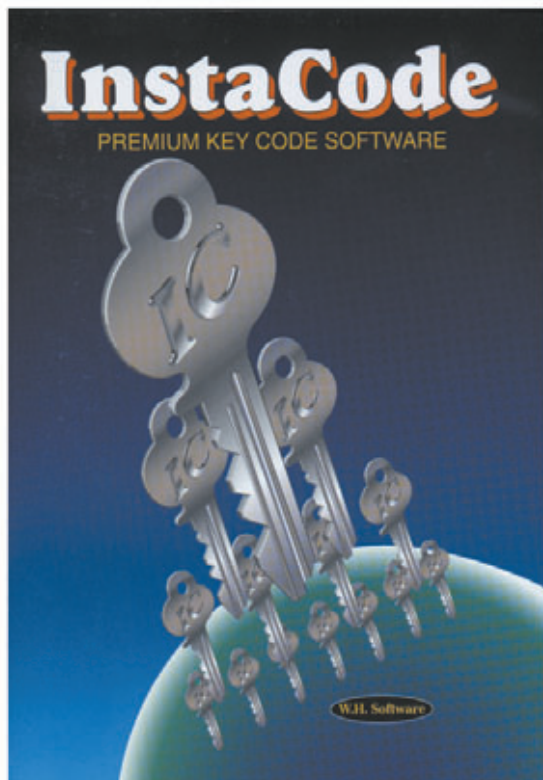


9. A frontal view of the cylinder shows the locking slot on the top. If the retainer is aligned with the locking slot when the plug is inserted into the cylinder it will hit the back of the slot and stop. Align the retainer with the large slot on the right and after inserting the plug part way, turn it counter-clockwise to depress the retainer and then push it all the way in.

8. From left to right are tumblers with depths of 55424 and the retainer.



Continued on page 141



InstaCode 2002

InstaCode 2002, the latest release of InstaCode, includes over 5000 code series covering general/utility, padlock, vehicle and motorcycles.



[CLICK HERE TO LEARN MORE](#)

#IC - 2002

Continued from page 138

Key Blanks

Boerkey: 666KA, CEA: NM3,
Curtis: MC-44, DL: SR61N,
Errebi: NE3, Fuki: K-173, Ilco:
Y61, Ilco EZ: Y61, JMA: NE6,,
Kis: AV1, Kraga: N4, Lotus:
NE8, Mr Minit: 75, Orion:
NN15, RR: NN14, Silca: NE5,
aTaylor: B69K

Number of Cuts: 5

Key Gauged: Shoulder

Center of First Cut: .142

Cut to Cut Spacings: .1040

Cut Depth Increments: .020

Spacings: 1 - .142, 2 - .246,
3 - .350, 4 - .455, 5 - .559

Depths: , 1 = .157, 2 = .177,
3 = .197, 4 = .217, 5 = .236

HPC 1200CMB

Code Card: MC10

Jaw: A

Cutter: CW-47MC

Gauge From: Shoulder

HPC 1200PCH (Punch):

PCH Card: MC10

Punch: PCH

Jaw: A

Silca UnoCode

Card Number: 22

Vice/Adapter: V100 Standard

HPC CodeMax

DSD #: 400

Jaw: A

Cutter: CW-47MC

Framon #2

Cuts Start at: .140

Cut to Cut Spacing: .1080

Block #: 3

Depth Increments: .200

Cutter: FC9040

Key Clamping Info: Use flip-up
shoulder stop.

ITL 9000 & 950

Manufacturer ID: 57

The lock/latches are available from BMW motorcycle dealers. There are two styles; one is used to secure the lid and the other is used to secure the luggage to the motorcycle. The locks are the same in both but the latch is different.

Lid Lock/Latch: Part Number 36542303640 Price \$40.95

Luggage Lock/Latch: Part Number 36542303652 Price \$45.75

Code Series: AA, BA, CA, EA11111-55555 direct read bow to tip.

There are also codes that include a 0, H, or Z at various places in the code such as 110111-550555 or 11111Z-55555Z. Whenever the 0, H, or Z appear, just ignore them and use the 1 to 5 depth numbers to cut the key. **ITL**

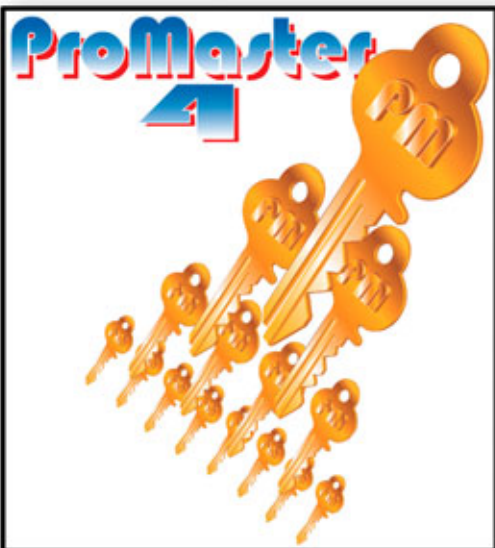
Wafer Lock Reading



Easy to learn.
No Codes
needed.

CLICK HERE TO LEARN MORE

#WLR - 1



ProMaster 4

ProMaster 4 is without a doubt, the most comprehensive and easy to use master-key system management tool available anywhere in the world.

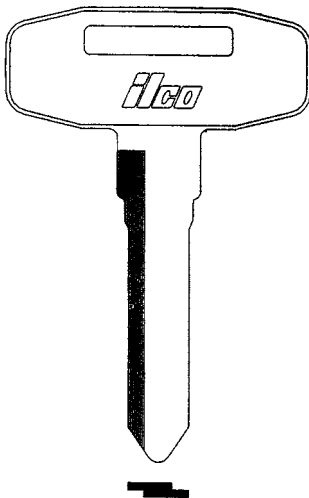
CLICK HERE TO LEARN MORE

#PM - 5

KEY CODES

The HPC 1200CMB and
1200PCH code cards for this
code series are between
pages 138 & 141

Fuso Trucks 8100-9113, part 2



Manufacturer: Fuso

Code Series: 8100-9113

Key Blanks: Curtis: FS-1,
Errebi: MIT10R, Fuki: M340,
Ilco: FU2, Ilco EZ: FU2, JMA:
MIT-11D, Lotus: MT117,
Orion: MS19L, R Clover:
FM340, Silca: MIT9A, Taylor:
FU2

Number of Cuts: 8

M.A.C.S.: 2

Key Gauged: Tip 2

Center of First Cut: .907

Cut to Cut Spacings: .098

Cut Depth Increments:
.032

Spacings: 1 - .907, 2 -
.809, 3 - .711, 4 - .612, 5 -
.514, 6 - .415, 7 - .317, 8 -
.222

Depths: 1 = .315, 2 = .283,
3 = .252

HPC 1200CMB

Code Card: N/A

Jaw: A

Cutter: CW-1011

Gauge From: Tip

HPC 1200PCH (Punch):

PCH Card: N/A

Jaw: A

Silca UnoCode

Card Number: 263

HPC CodeMax

DSD #: 254

Jaw: A

Cutter: CW-1011

**Curtis No. 15 Code
Cutter:**

Cam-Set: HD-9

Carriage: FS-1A

Framon #2:

Cuts Start at: .287

Cut to Cut Spacing: .098

Block #: 5

Depth Increments: .030

Cutter: FC9040

Key Clamping Info: Use flip-
up shoulder stop.

A-1 Pack-A-Punch

Quick Change Kit: N/A

Punch: N/A

Die: N/A

ITL 9000 & 950

Manufacturer ID: N/A

8501 31312133
8502 13313122
8503 23113113
8504 32313321
8505 13312313
8506 21213121
8507 32331121
8508 23131133
8509 13223122
8510 12332132
8511 23122131
8512 22113311
8513 33212321
8514 12112313
8515 31231322
8516 12132132
8517 21321233
8518 32232113
8519 13121323
8520 13312122
8521 13133211
8522 12131221
8523 21331322
8524 32313213
8525 32311231

8526 31312123
8527 12211321
8528 23313113
8529 32323122
8530 32123211
8531 23133113
8532 32322321
8533 33131213
8534 23133132
8535 23233123
8536 12131232
8537 22323113
8538 11232311
8539 23313221
8540 21313212
8541 21133113
8542 11331221
8543 13323211
8544 21313123
8545 23211231
8546 12131321
8547 23323321
8548 12113132
8549 11233113
8550 13221313

8551 33233122
8552 32232231
8553 11321212
8554 23132332
8555 23113112
8556 12321322
8557 33223212
8558 33112211
8559 13233113
8560 33121313
8561 13231221
8562 12131332
8563 13321311
8564 21123123
8565 21331233
8566 33212122
8567 31311221
8568 13121322
8569 23232313
8570 22332313
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8573 31133123
8574 32213131
8575 12231123

8576 23311211
8577 23231332
8578 32132331
8579 31231221
8580 21123133
8581 11323123
8582 33211332
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8587 32121311
8588 12321211
8589 13323131
8590 11231212
8591 21331133
8592 23212113
8593 13212231
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8595 21122331
8596 21312331
8597 33131231
8598 32233212
8599 21231211
8600 33233112

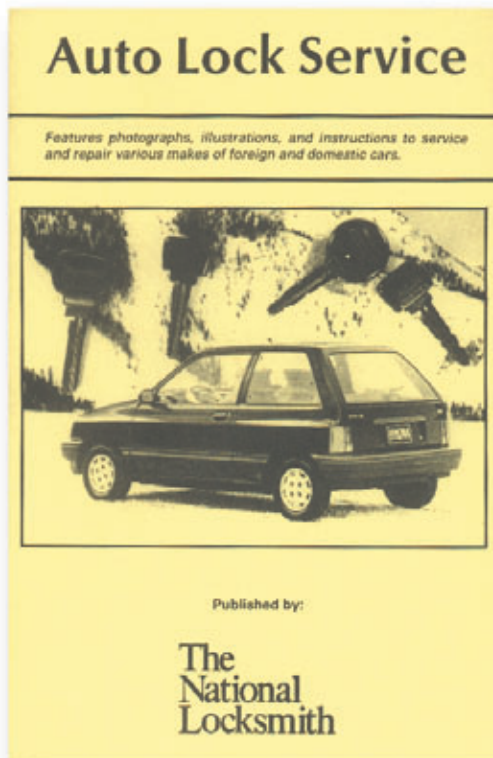
Continued on page 144

Continued from page 142

Fuso Trucks 8100-9113, part 2

8601	32313221	8610	21313113	8619	13213123	8628	21331331
8602	12121231	8611	21331311	8620	12121331	8629	12231132
8603	32331122	8612	33131221	8621	11323213	8630	21213312
8604	21213132	8613	11332331	8622	13113221	8631	31331212
8605	13113232	8614	12313121	8623	13213322	8632	23223231
8606	32213121	8615	13121331	8624	12312213	8633	12323313
8607	22123311	8616	13231133	8625	32132122	8634	21312323
8608	13212112	8617	21133112	8626	11331323	8635	22133213
8609	22322331	8618	23233132	8627	23133223	8636	23313121
						8637	21312122
						8638	13232231
						8639	23213313
						8640	13112132
						8641	22311311
						8642	21232121
						8643	21132131
						8644	32113313
						8645	23312332
						8646	13233212
						8647	31312132
						8648	32332321
						8649	32323211
						8650	22313131
						8651	13312112
						8652	33113122
						8653	23121311
						8654	22323112
						8655	12213211
						8656	23232312
						8657	12231213
						8658	23121213
						8659	23312213
						8660	33133112
						8661	12331231
						8662	12113231
						8663	23112121
						8664	13131123
						8665	33112323
						8666	23211221
						8667	23313212
						8668	31223121
						8669	33121123
						8670	31223311
						8671	32331123
						8672	21323231
						8673	13211321
						8674	12332122
						8675	12131313

Auto Lock Service



Covers opening and service techniques.

[CLICK HERE TO LEARN MORE](#)

#ALS - 1

Fuso Trucks 8100-9113, part 2

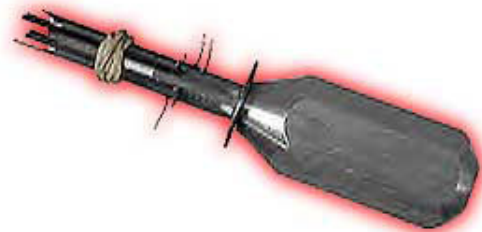
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8680 23231213
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8685 21313211
8686 22323321
8687 31132313
8688 23131322
8689 32231232
8690 23231322
8691 22311211
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8695 21123312
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8707 21221311
8708 13121321
8709 31312212
8710 32122331
8711 11332133
8712 23232113
8713 23112232
8714 21312131
8715 23112331
8716 32323132
8717 31331121
8718 32322313
8719 21331131
8720 13212312
8721 23312323
8722 11223133
8723 13212131

8724 31312231
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8731 23122313
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8733 31332321
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8740 23123223
8741 31211231

8742 33122321
8743 11223211
8744 22311313
8745 23312133
8746 13233213
8747 13323123
8748 13313211
8749 13112233
8750 23113311

How To Pick Tubular Locks



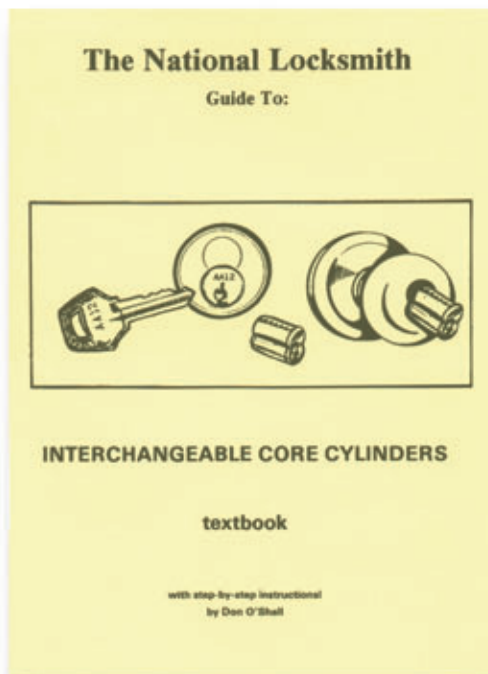
This software shows you every step of
tubular lock picking in clear and simple detail.

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Fuso Trucks 8100-9113, part 2

8751	12321223	8773	22322311	8795	13311212	8817	33112123
8752	12123213	8774	21321121	8796	13212313	8818	23133231
8753	21313213	8775	11331132	8797	13312113	8819	33212311
8754	13322313	8776	23311223	8798	33212232	8820	23311313
8755	22311331	8777	13121332	8799	13232121	8821	23233231
8756	23131131	8778	12132313	8800	12312321	8822	33132212
8757	22312132	8779	13311213	8801	32331322	8823	12332131
8758	32233113	8780	13323132	8802	21231223	8824	23131331
8759	31311322	8781	31131323	8803	31132132	8825	23213231
8760	23313123	8782	22321321	8804	33232321	8826	32213122
8761	21131233	8783	12113122	8805	31232132	8827	23321331
8762	11233211	8784	33132121	8806	13232331	8828	32231331
8763	32131223	8785	13323212	8807	23231132	8829	31312213
8764	13321233	8786	32213313	8808	21331332	8830	21313131
8765	21223131	8787	13133221	8809	31132122	8831	13132233
8766	12213113	8788	12133131	8810	33131223	8832	32133112
8767	11223122	8789	31231233	8811	22311232	8833	31231331
8768	21321312	8790	12322312	8812	13113132	8834	31321323
8769	13221311	8791	21131132	8813	33212123	8835	33231123
8770	22331213	8792	12132123	8814	23123312	8836	31122321
8771	13112133	8793	21223312	8815	31312321	8837	12312112
8772	31323131	8794	23321312	8816	22112321	8838	21331231



Interchangeable Core Cylinders

Covers all this...

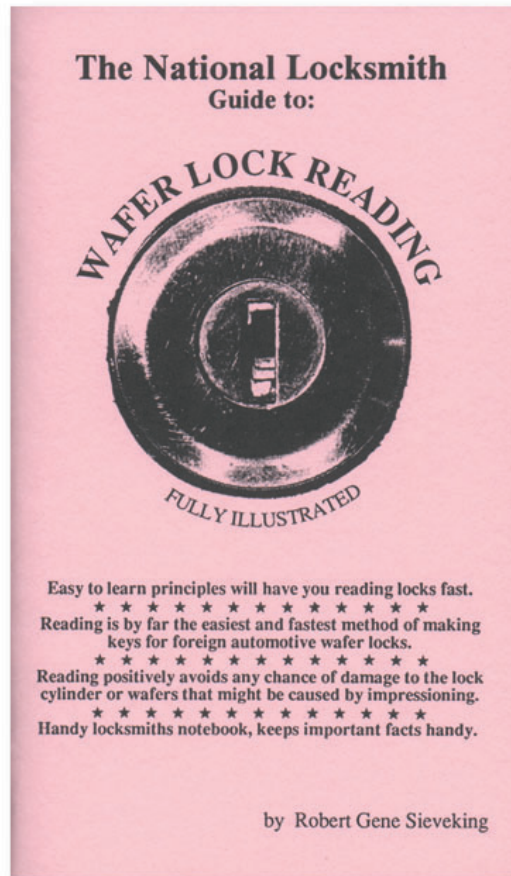
- Best/Falcon/Arrow/Eagle/(A2)
- Best A3
- Best A4
- Corbin X Removable Core
- Corbin Z Removable Core
- Russwin Removable Core
- Emhart System 70 Removable Core
- Sargent Removable Core
- Schlage, Yale, Lockwood
- Medeco Removable Core

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Fuso Trucks 8100-9113, part 2

8839 21323133
8840 21311213
8841 33212133
8842 21332121
8843 13211233
8844 13322311
8845 31233112
8846 13113212
8847 23113133
8848 31231332
8849 32331312
8850 22332123
8851 13121232
8852 12332133
8853 13323311
8854 23311233
8855 13213211
8856 13131332
8857 32123121
8858 13323113
8859 23211311
8860 13221231
8861 32123131
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8867 31332231
8868 23231331
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8872 31132331
8873 31323122
8874 31121312
8875 21313223
8876 22331233
8877 13121223
8878 32321133
8879 13232123
8880 12331131
8881 32132121
8882 13211323
8883 33231321
8884 23212332
8885 32213212
8886 23313321

Wafer Lock Reading



Easy to learn.
No Codes needed.

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#WLR - 1

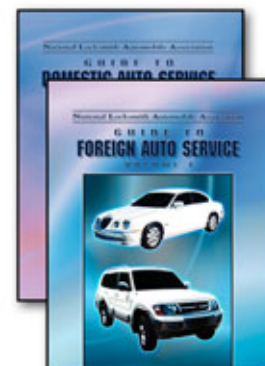
Fuso Trucks 8100-9113, part 2

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8891	11332313	8926	11321332	8961	31323312	8996	31323112
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8894	32321312	8929	31231232	8964	21131332	8999	12133212
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8897	13231313	8932	33223312	8967	22312332	9002	13322131
8898	12323133	8933	22323131	8968	13312322	9003	12323213
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8905	11331223	8940	31232321	8975	31232231	9010	21212321
8906	23313223	8941	23112113	8976	21233123	9011	23313311
8907	12323311	8942	12321123	8977	21132312	9012	33132132
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8909	23113313	8944	12312322	8979	23311323	9014	12231233
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8914	23131232	8949	31223313	8984	32123312	9019	33113223
8915	21323313	8950	23132321	8985	31123212	9020	23321332
8916	21311331	8951	13121132	8986	31131321	9021	13223321
8917	13131122	8952	13211212	8987	13232133	9022	23132313
8918	21123311	8953	13113321	8988	21331122	9023	13131321
8919	31312121	8954	12231133	8989	32121321	9024	31321122
8920	12113312	8955	12331232	8990	12331133	9025	31221331
8921	11321322	8956	23321322	8991	12123313	9026	23213112

NLAA Guide to Auto Service

You get car opening, lock removal and service, column service, key and code series information, and many views of the doors, panels and locks.

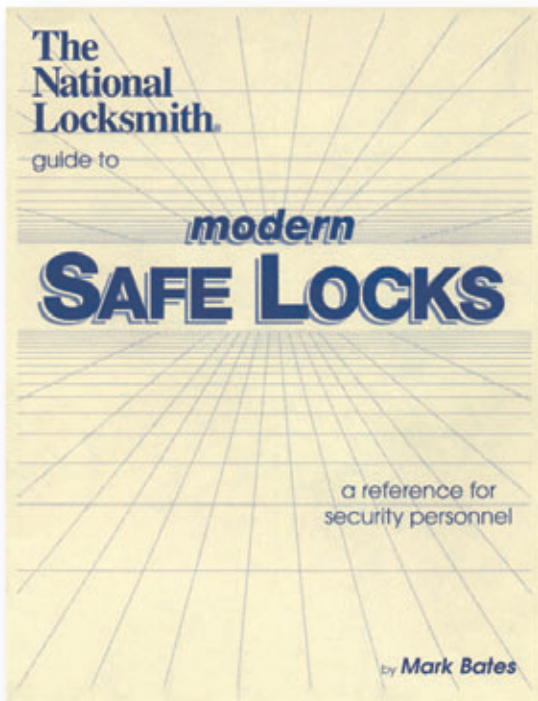
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Fuso Trucks 8100-9113, part 2

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9028	23231232	9050	12311233	9072	32211331	9094	13321211
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9034	13122123	9056	31312312	9078	32131132	9100	11313121
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9040	23121312	9062	31132133	9084	32212331	9106	11232312
9041	33212121	9063	32231212	9085	12312232	9107	31311233
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9043	13131233	9065	22133123	9087	31331321	9109	33113231
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9046	21132112	9068	21131331	9090	11332113	9112	31213113
9047	22123123	9069	23312331	9091	23131212	9113	31311231
9048	23112112	9070	13132331	9092	22321332		

TNL



Modern Safe Locks

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The National Locksmith

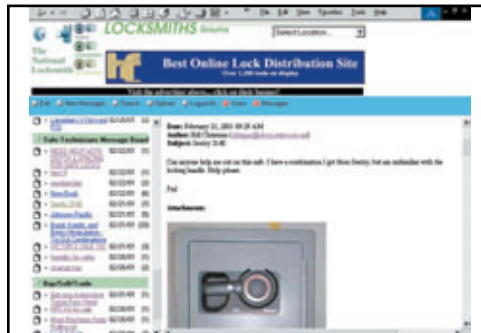
<http://www.TheNationalLocksmith.com>

Why is this web site logging about ten thousand user sessions a WEEK? What's all the fuss about? So The National Locksmith has a web site. Doesn't everyone have a web site these days?

The answer is that most companies have web sites today. But we can't think of even one that gives you what TheNationalLocksmith.com offers our industry on a free basis. Specifically for locksmiths, we offer video car openings that you can watch, and see the linkages move.

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When you come to the site, just click on the Locksmith button or the Store button to see what we have to offer. For fullest access to all the benefits of the site, go to the Locksmith area, register, then follow the link for level 2 registration. Then you have complete site access. Enjoy!

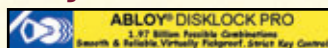


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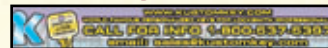
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KSP



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Major Manufacturing



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McDonald DASH Locksmith Supply



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Meilink



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Monaco Lock



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Omaha Wholesale Hardware



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ROFU International Corp.



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Sieveling Products Co.



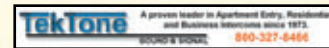
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**Taking
Industry Products
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**TEST
DRIVE!**

An old friend of mine is notorious for loosing, bending, breaking, hiding and forgetting her keys. It always made my day when she called with the "You won't believe what happened" story. It got to be so bad that I kept an extra set of everything she had (keys that is) in my truck. I always insisted that she have three sets of keys before I left, not that it did any good!

Some of her friends suggested that she put one of those magnetic key holders somewhere on her vehicle. She thought that was a great idea. Well, she lost that too! If we had only known about Supra Products a few years ago, she would have been much happier and a few dollars ahead of the game.

COMPANY INFORMATION:

Supra Products, based in Salem Oregon, is said to be the world's leading key control and access management provider. It is a multinational operation that provides access management solutions in more than 20 countries.

Supra has been in business for over 40-years and provides a full range of key and access management products for use in a variety of consumer applications. They include industrial, real estate and automotive markets. Supra products provide easy access to a spare set of keys. This month I want to tell you about the Supra Auto/SUV StorAKey.

DESCRIPTION:

The StorAKey is designed to allow quick and easy access to keys through the use of a 10-button keypad. The actual strongbox measures 3-7/8" long by 2-1/4" wide by 1-3/4" deep. The metal



StorAKey®

**from
Supra
Products**

construction provides security and at the same time is guaranteed never to rust. It can be attached to any surface with screws. The Auto/SUV model includes a full rubber cover that prevents dirt and water from entering the storage area.

The idea is to attach the StorAKey to a convenient place on a vehicle or trailer. This will ensure that you always have an extra set of keys available. StorAKey is opened by pressing a minimum of none (that's right none) to a maximum of ten buttons on the keypad. Each number can only be used once. If a wrong number is pressed, sliding the reset button will allow you to start over.

The numbers can be changed by the user at any time. The process is very simple. On the back of the cover you will find ten small things that look like screw heads. Each one has an arrow on it. Turn the arrow with a screwdriver to enabled or disabled the corresponding number.

CONCLUSION:

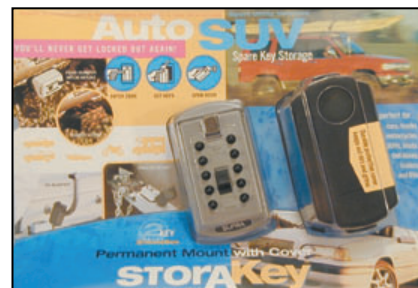
If you need to store a key for any reason, this little box will do an excellent job. It is tough, and small

enough to attach in an inconspicuous place. The rubber cover will do an excellent job of keeping out sand and dirt.

PRICE:

StorAKey has a MSRP of \$49.95 and is available only through distributors.

For more information on the StorAKey and other available products, call Supra Products in the USA at 800-225-2974. If in Europe call +44 (0) 1905-797772. You can also view their products at www.supra-products.com.



To contact a customer support representative, you can call them seven days a week at 800-547-0252. Circle 219 on Rapid Reply.



IN SUMMARY:

DESCRIPTION: A lock box designed to allow access to keys with a 10-button keypad.

PRICE: \$49.95

COMMENTS: The metal construction provides security and is guaranteed never to rust.

TEST DRIVE RESULTS: If you need to store a key, this little box will do an excellent job.